METAWATER REPORT 2019

The Fiscal Year Ended March 2019

METAWATER

METAWATER Co., Ltd.

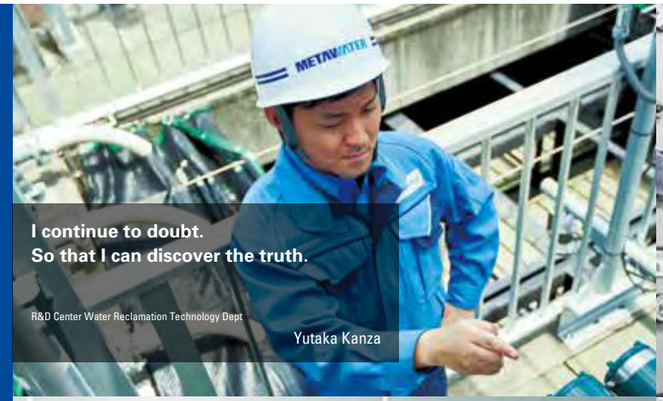
Continue,
to make it sustainable.

We continue to be sincere in what we do.
We work on problems earnestly and
strive to provide solutions.

We continue to collaborate with our partners.
We respect our partners and work to achieve with
diverse knowledges, technologies and cultures.

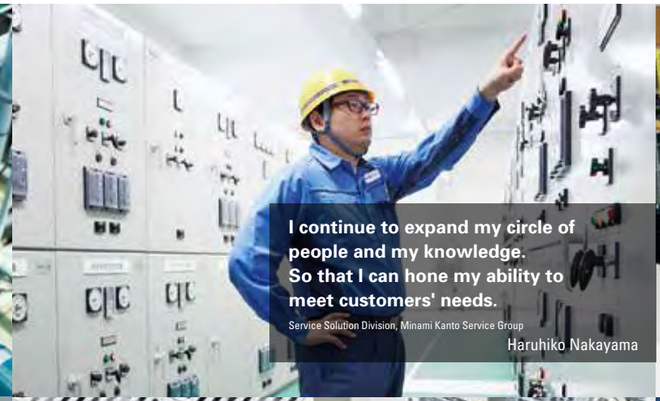
We continue to innovate for the future.
We experiment in new ideas and take challenges.

To make sustainable what is truly important.



I continue to doubt.
So that I can discover the truth.

R&D Center Water Reclamation Technology Dept
Yutaka Kanza



I continue to expand my circle of people and my knowledge.
So that I can hone my ability to meet customers' needs.

Service Solution Division, Minami Kanto Service Group
Haruhiko Nakayama

I continue to pass down knowledge and never stop learning.
So that I can make better designs.

Plant Engineering Div Water Reclamation Engineering Dept Gr 1
Hikaru Kozaki

I continue to interact.
So that I can build a relationship of trust.

Project Planning Dept Project Planning Gr 1, Group Manager
Shunjiro Morinaga

I continue to look at things from the viewpoint of a partner.
So that I can assist customers and maintenance operators.

Plant Engineering Div Resource Reclamation Engineering Dept Thermal Treatment Gr
Ayaka Koyano

I continue to challenge myself.
So that I can make METAWATER technology the world standard.

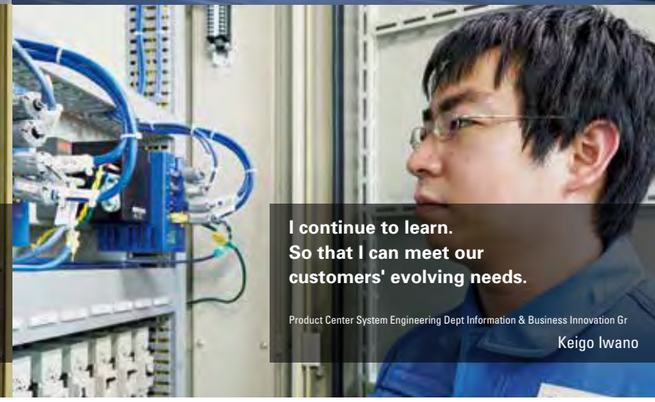
International Business Division, Overseas Sales Department
Shintaro Seo

I continue to give 100%.
So that I can fulfill our responsibility of supporting infrastructure.

Plant Engineering Div
Resource Reclamation Engineering Dept Sludge Treatment Gr
Yukinori Hasegawa

I continue to worry together.
So that I can solve customer issues, together.

WBC(Water Business Cloud) Center WBC Promotion Dept Project Promotion Gr
Shuichi Sakamoto



I continue to learn.
So that I can meet our customers' evolving needs.

Product Center System Engineering Dept Information & Business Innovation Gr
Keigo Iwano

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Glossary

EPC	Design and construction of facilities and equipment
O&M	Operation and maintenance of facilities and equipment
PPP	A concept referring to an approach allowing the private sector to participate in projects related to public services offering in a wider sense. Improvement of efficiency and quality of services are sought by making positive use of private funds, technologies, know-how and management skills.
PFI	Comprehensive implementation of facility design, construction, maintenance, repair, etc., utilizing the capital and know-how of private businesses.
DBO	An approach using the know-how of private businesses to comprehensively implement facility design, construction, maintenance, repair, etc.
DB	An approach using the know-how of private businesses to comprehensively implement facility design and construction.
SPC	Companies whose purpose is to run specific business operations
PFI Act	An act related to the promotion of public facility improvement, etc. by making positive use of funding from the private sector and so forth.
Concession	An approach granting operating rights of public facilities that collect usage fees to a private business while the public entity maintains ownership.

Bringing water and environmental infrastructure to the next generation through public-private partnerships.

We are faced with various challenges regarding water and environmental infrastructure.
To overcome these challenges, we must undertake water supply business operations through public-private partnerships.
Through this we can pursue sustainability, ensuring that we can use safe, clean water reliably and indefinitely.
We are the ones responsible for future generations.

Takuya Urakami

Professor of the Kindai University Faculty of Business Administration. Ph.D. in Business Administration. Born in Amakusa City, Kumamoto Prefecture. Completed his doctorate at the Graduate School of Business Administration, Kobe University. Assumed current position in April 2013 after working as a contract researcher at the Osaka Prefectural Institute for Advanced Industry Development and as a lecturer for the Faculty of Business and Economics at Kindai University. Specializes in the economics of public utilities. Council member for the Ministry of Health, Labour and Welfare, the Ministry of Land, Infrastructure, Transport and Tourism, and for many local governments.

Current state and issues facing water infrastructure in Japan

The history of modern Japanese waterworks began in Yokohama, in 1887. It was designed to prevent water-borne infectious diseases and fires, with municipalities in mind as the suppliers. Since then, the water supply business has been operated on the principle of independent profit as a local public enterprise under the principles of municipal management.

The spread of waterworks expands rapidly with high economic growth. What was just 32.2% in 1955 exceeded 90% in the 1980s, and that number reached 98% by the end of 2017. Considering that approximately 70% of the total land area of Japan is comprised of forests, it is acceptable to think that a national public water supply has basically been achieved.

In entering the 21st century, Japan is facing major changes to its social structure. Needless to say, declining birthrates and a shrinking and aging population are among these. According to the National Institute of Population and Social Security Research, the total population of Japan began to decline after peaking in 2008. This rate of decline will accelerate in the future, and the population is expected to fall below 90 million people by 2063 before finally falling to approximately a half of peak population around 2100.

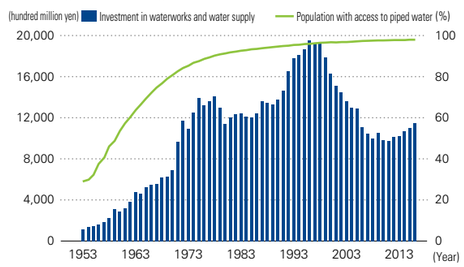
But this is not the only problem Japan is facing. As you are well aware of, the tremendous amount of damage caused by the frequent occurrence of natural disasters in recent years. Strong lifelines need to be built to counter the major earthquakes exceeding maximum seismic intensity of lower 6, massive typhoons, guerrilla rainstorms, and other natural disasters occurring almost every year.

Let's take a look at management of the water supply business. As of the end of FY2017, there were 1,347 water supply companies in Japan (those supplying water to at least 5,000 people). Many of these companies are profitable. This does not show that management is stable. To start, water supply businesses are operated as local public enterprises on the principal of independent profit. Construction and improvement of facilities are primarily funded through internal funds (internal reserves) and new debt (corporate bonds). It's easy to see that if the balance of dept (corporate bonds) becomes too large, it can cause a crisis for future management. In order to keep management stable, sufficient internal funds must be held.

These internal funds serve not only as a source of future investment, but also as an important method for protecting against risks such as natural disasters. They compensate for the temporary increase in expenses when a disaster occurs, and also allow management to continue even if there is no income from charges for a fixed period. Profit (surplus) must be generated to secure these internal funds.

But in reality, many companies are far from achieving sustainable management practices, instead reducing the number of staff (reducing labor costs) to reduce water prices, postponing investments in improvements, and borrowing more than is necessary in order to reduce the burden on the current generation.

Changes in coverage of water supply system and investment



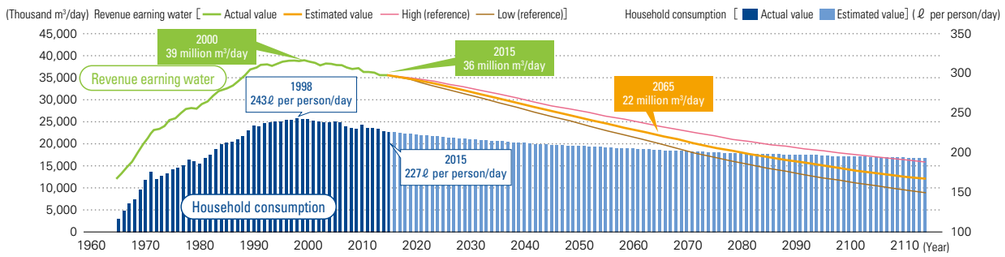
Source: Ministry of Health, Labour and Welfare

From what we have seen so far, it's hard to be optimistic with regard to the reality of the water supply business in Japan. Facilities constructed during periods of high economic growth are already aging. Increases in future investment are expected due to planned improvements. And a certain amount of investment is also required to make the facilities resilient to natural disasters. However, in the future revenues will decrease due to the declining population. Currently, the expenses that should be borne by the current generation are being postponed to the next generation in order to reduce water prices.

There is no doubt that our waterworks are the most indispensable piece of social infrastructure in our lives. The waterworks industry has moved from the construction era in the 20th century, to the maintenance era in the 21st century. What should we do to "protect" rather than "create" our water infrastructure? In today's rapidly changing socio-economic environment, advanced management capabilities are required to manage the water supply business. We need to think deeply on this in order to ensure the water supply business is sustainable and to fulfill our responsibility to future generations.

Water supply business in a society with a declining population

- Revenue earning water has been decreasing since hitting its peak in 2000, as changes in Japan's population and the spread of water-saving equipment has led to lower amounts of water being used per person. By about 2065, this revenue earning water will drop to approximately 60% of its peak amount.
- In principle, the water supply business is operated through water charges (independent profit system), but revenue decreases along with a declining population, and so the management situation is becoming ever more severe.



Estimation method

(1) Population being supplied with water: Calculated by multiplying Japan's estimated future population (2017 estimate) by the rate of population served by water supply (2015 actual results: 94.4%).
(2) Volume of revenue earning water: Estimated by separating into household and non-household use.
Revenue earning water from household use: Household consumption × population being supplied with water
Since it is difficult to grasp trends of waterworks exclusively for groundwater use, future economic trends, etc., revenue earning water from non-household use is assumed to change in accordance with that of revenue earning water from household use, with the ratio for non-household use set at 0.310 that of household use.
(3) The high and low levels are the results of estimations when Japan's estimated future population is changed to low death/high birth rates (high), and high death/low birth rates (low).

Source: Ministry of Health, Labour and Welfare

Background to the enforcement of the revised Water Supply Act and points of revision

The biggest factor leading to the revision of the Water Supply Act was that as an industry, Japanese waterworks had reached a stage of maturity. The percentage of the population with access to piped water has been almost flat since 2000, and the population being supplied with water has been steadily decreasing as Japan's total population decreases. Water facilities constructed during periods of high economic growth are already aging, and the time for full-fledged renovation and reconstruction has arrived.

"Creating" and "maintaining" are two entirely different things. The first thing we must do is change our way of thinking. On top of that, Japan is now in a society with a declining population. How will maintenance be carried out as the population decreases, the demand for water declines, and less water revenues are received? "Advanced management capabilities" are required.

As mentioned earlier, there were 1,347 water supply companies in Japan as of the end of 2017. Most of those are small-scale businesses with less than 10 employees. In this rapidly changing socio-economic environment, how can small-scale businesses exercise advanced management capabilities while also taking on their daily duties? In addition, a decline in population means a decline in the number of municipal employees. The water utilities run by municipal management are no exception. The number of people employed in the water supply business is on a downward trend, and it is difficult to secure the employees they need, let alone pass on their technology and know-how.

It was under these circumstances that the Water Supply Act was revised at the end of 2018. I would like to point out three things. First, the act has declared that the waterworks industry had shifted from the construction era to the maintenance era. In Article 1 of the Water Supply Act, the aim of waterworks has been changed from "planned maintenance" to "strengthening infrastructure". Second, the responsibilities of the national government, prefecture, and business operator have been clarified. The act has defined that the national government establishes basic policies to strengthen infrastructure and prefectures establish plans for strengthening water supply infrastructure as well as set up councils to promote regional collaboration. The act has also defined that business operators are obliged to create water supply facility ledgers, and that they should create and publish future income and expenditure prospects. Third, the introduction of concessions is now possible as a new form of public-private partnership. While the granting of operating rights themselves are a national permission, creative originality is expected from the local governments in determining the scope of the operating rights, determining usage prices, etc.

Measures for strengthening water infrastructure

Promotion of regional collaborations	Promotion of public-private partnerships
Prefectures are the facilitators	Introduction of concessions

Japan's water supply system faces an extremely difficult situation. Regional collaborations and public-private partnerships are key to ensuring that a water supply industry with such a large number of small-scale businesses can continue to be sustained for the next 50 to 100 years. These regional collaborations and public-private partnerships can be effective in helping to create an organization that demonstrates advanced management capabilities.

Expectations of the private sector in the water supply business

In the water supply field, the abilities of the private sector have already been utilized across a wide area. It would not be an exaggeration to say that without the power of the private sector, our water supply system would not be possible. Nevertheless, when the Water Supply Act was revised at the end of 2018, intense discussions against privatization were held. It is thought that users feel "somewhat uneasy" about leaving water supply in the hands of private companies. However, stepping back and taking another look, many products and services all around us are offered by private companies. These range from the essential to the frivolous. Historically, there have been many services that have improved greatly with the transition from the public to the private domain.

In order to rid users of their "somewhat uneasy" mentality, the government needs to actively send out correct information, allowing users to gain an understanding of public-private partnerships. On top of that, water utilities need to also recognize that public-private partnerships are not just a means for reducing costs, but are an effective way of ensuring the sustainability of our water supply, and as such they should be exploring options for desirable partnerships between the public and private sectors.

With this uncertain future on the horizon, I believe that the role expected of private companies related to the water supply business is to greatly "complement the public". As manifested in the previous opposition to privatization, the idea that the water supply should be publicly managed is deeply rooted in Japan. On the other hand, the small-scale water supply businesses that maintain the framework of municipal management we have now can lead to failure if left as is. The power of the private sector, which makes up for shortages of human resources and has advanced management capabilities, is essential in making a sustainable water supply a reality. From north to south, Japan stretches across a vast distance, and has many distinctive areas with different historical and cultural backgrounds. I want to see the private sector propose public-private partnerships that are ideal for each region.

Proposal for "providing a stable supply of safe water for the future"

The "basic policies" established by the Water Supply Act clearly state the responsibilities of residents who are waterworks users. They state that residents should be aware that they are participating in the management of the water supply, and that they should understand that financial resources need to be obtained through water charges for the maintenance and planned improvement/renovation of facilities.

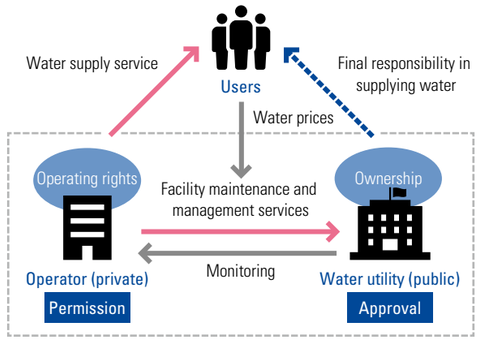
To ensure our children and grandchildren can use the waterworks safely and with peace of mind, we, the current generation of users, need to understand everyone's roles regarding the water supply and make sure we bear the costs through paying the appropriate water usage fees.

Responsibility for ensuring the sustainability of our water supply does not lie only with the municipalities, nor is it entirely on the shoulders of the private sector. I believe that an indispensable part of realizing a safe and secure water supply in the future lies in us, everyone who uses the water supply system in any way, truly coming to grips with the fact that we are all responsible.

What is a concession agreement?

Many water utilities have been operated by public entities.

Concessions in the water supply business are agreements in which long-term operating rights are granted to a private business while approval of business items and facility ownership remain in the hands of the public. Private businesses permitted by the Minister of Health, Labour and Welfare can operate the business using fees collected from users as a source of funds. This is expected to contribute to a sustainable water supply business, using operating revenues to repay existing debt in full and reducing operating expenses and improving service levels by utilizing the know-how of the private sector in a comprehensive range of areas not seen before.



METAWATER will continue to undertake steady efforts to earn the confidence and trust of citizens while also taking bold measures to respond to the rapidly changing environment.

Yasushi Nakamura

President and Representative Director METAWATER, Co., Ltd.

Before being designated as the President and Representative Director in June 2016, he experienced a series of management positions in the Plant Engineering and Service Solution Divisions, as well as accepting the role of Executive General Manager of the Corporate Strategy Planning Division. He has been engaged as a key member of the development of the Water Business Cloud (WBC), and is well versed in business execution in a wide range of fields supported by his affluent experience.

In April 2008, the METAWATER Group was established as the first comprehensive engineering enterprise in Japan engaged in the water and environmental fields. Since then, we have worked as a corporate group engaged in the social infrastructure indispensable to industries and people's lives, promoting the fusion of mechanical technology, electrical technology, ICT, and maintenance know-how, contributing to society through water, sewage, and resource environment businesses. At the same time, we are also engaged in CSR activities such as working to conserve the environment and contributing to local communities.

Much of Japan's water and sewage infrastructure was developed during a period of high economic growth, and the aging of these facilities and equipment has become a serious issue. Another major issue we're facing is the recent increased occurrence of natural disasters such as earthquakes, heavy rainstorms, and typhoons. However, local governments that plan and operate water and sewage businesses are having problems of their own, such as decreased income due to a declining population and a shortage of engineers.

In order to solve these problems, business operations urgently need further comprehensiveness and wider area management through public-private partnerships (PPP), and legislation is currently underway to promote this. The Group believes that Japan, which has experienced the Great East Japan Earthquake, can create a sustainable water and environmental infrastructure, and has been exploring how best to achieve that over time. Finally, we are ready to move on to specific measures. We will continue to undertake sincere efforts in order to be a corporate group confidently entrusted with the social infrastructure of the future.

In response to the revised Water Supply Act, we will continue to undertake steady efforts to gain the trust of citizens.

In December 2018, the "revised Water Supply Act" was enacted. In this revision, the aim of the act was changed from "planned maintenance" to "strengthening infrastructure" regarding water infrastructure. Additionally, prefectures have become responsible for "wider area management", and local government and other business entities are obliged to carry out "maintenance of ledgers" and "appropriate maintenance and repair". As another option for improving the efficiency of business, concession agreements can now be established as well, which allow operation of the business to be outsourced for long periods of time while ownership of the water supply business and water infrastructure are maintained by the local government.

Since the enforcement of the PFI laws in 1999, approximately 60 PPP applications have been accepted nationwide regarding the water and sewage field. The METAWATER Group has taken part in about half of those projects, handling everything from facility design and construction to operation, maintenance, and management. Up to now we have worked on a number of further comprehensiveness projects, including those supporting management and planning for local governments, fee collection, and support for residents, etc. In order to continue with the steady activities we have been engaged in during this period and to be able to take on wider area management projects, we will be adopting the "three centers concept" centered around the "Training center for facility operators", "Knowledge center", and "Supply center for parts". In addition, we will work to reduce construction costs and improve maintenance efficiency through the incorporation of cutting-edge technologies such as AI*1 and ICT*2. Furthermore, we are actively promoting the disclosure of information and aiming for highly transparent business operations.

Main points regarding the revised Water Supply Act

1. The aim of the Water Supply Act has changed from "planned maintenance" to "strengthening infrastructure" on the premise of renewal, maintenance, and operation of the water supply business
2. The promotion of "wider area management" is the responsibility of prefectures, and the "maintenance of ledgers" and "appropriate maintenance and repair, including inspection" are obligations of the local government
3. The concept of water charges has been changed to "fair and reasonable to ensure sound management"
4. The "Water Facility Operating Rights Granting Permit Method" (concession agreement) was established as a private-public partnership method

*1 AI : Artificial Intelligence; technology that gives computers recognition and inference capabilities similar to that of humans
*2 ICT : Information and Communications Technology related to computers and the Internet
*3 Refer to "Achieving our long-term vision" (P15-16).

To realize our long-term vision, METAWATER will continue to take bold measures to respond to the rapidly changing environment.

In the future, major environmental changes are expected, including a further increase in the number of projects for further comprehensiveness and a growing demand for wider area management represented by concessions. In anticipating these changes and strengthening our corporate structure to realize our long-term vision*3 aiming for sales of 200 billion yen, in April 2018 the METAWATER Group formulated the "Mid-Term Management Plan 2020", which will end in March 2021.

Under the "Mid-Term Management Plan 2020", we will implement "strategic development investments" in addition to conventional development investments, and are also working on development of products, solutions, and new businesses that are essential for medium- to long-term growth. In terms of business strategy, we are capturing replacement demand and reinforcing the domestic EPC business, while at the same time steadily increasing a stock business, the domestic O&M business. We are also working to expand the domestic PPP business, which is positioned as a field for growth, and reinforce and expand overseas business foundations, through regional and partnership strategies making use of our results thus far.

Additionally, we are promoting work-style reforms, creating a work environment in which excellent human resources will constantly join the company and enabling growth and innovative work.

The environment in today's Japan is changing drastically due to a declining population, frequent natural disasters, etc. If you look overseas, the number of people without access to drinking water has been rapidly increasing, and numerous lives have been lost due to unsanitary water environments. Under these circumstances, the technology, know-how, human resources, and information that the METAWATER Group has available are indispensable.

We are making continuous efforts to ensure that the safe and secure water environment Japan currently enjoys will be available for our children, and their children as well. We will also expand our efforts to overseas countries requiring a better water environment.

Achieving our long-term vision

In May of last year, we announced the "Mid-Term Management Plan 2020". What future challenges will METAWATER face in starting these new initiatives to achieve its long-term vision?
We invited professional analyst Shusaku Nishikawa to interview President Nakamura.

Top Interview

Yasushi Nakamura
METAWATER Co., Ltd.
President and Representative Director

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Mr. Shusaku Nishikawa
Daiwa Securities Co., Ltd.
Senior Analyst, Equity Research Department

Shusaku Nishikawa
Graduated from the University of Tokyo Faculty of Law in 2008 and joined the Daiwa Institute of Research Ltd. as an analyst. In 2013, he was put in charge of the power and gas sectors. In 2014, he was put in charge of the power, gas, and oil sectors. In August 2016, he began covering METAWATER.

—— Please summarize the fiscal year ended March 2019, the first year of your "Mid-Term Management Plan 2020" (FY ended March 2019 to FY ending March 2021).

For the fiscal year ended March 2019, sales increased thanks to strong domestic EPC, O&M, and PPP performance. Operating profit, ordinary profit, and net profit increased due to improved gross profits from an increase in sales, all of them exceeding the initial plan.

In terms of orders received, domestic EPC performed well, becoming the second highest recorded sales after the previous year's record high. The order backlog, which indicates the potential for future growth, was able to reach a record high as well.

The difficulty faced since 2016 regarding sales and revenue due to long delivery times and an increase in large-scale projects continues, but during this period we have made steady efforts to reduce costs and improve project process management accuracy using ICT. From FY2019 on, we should be able to escape the slump we've been experiencing, as we expect long-term delivery projects to begin contributing to sales, efforts to reduce costs by completing construction work to progress, etc.

——It seems as though current business performance is steady, and that the probability to achieve the "Mid-Term Management Plan 2020" is increasing. What are your thoughts on this?

The "Mid-Term Management Plan 2020" has final year (ending March 2021) targets of sales of 128 billion yen and an operating profit of 9 billion yen.

This plan is based on a long-term vision of achieving sales of 200 billion yen. This must be achieved after implementing our "strategic development investments", which are a 40% increase over the past three years compared to traditional development investment, as well as our normal development investment, such as new product development and the incorporation of cutting-edge technology such as AI and ICT.

Looking at our current situation, our order backlog as of March 31, 2019 was a record high 142.4 billion yen thanks to a trend toward larger projects and longer construction periods. If we can make steady progress and complete these orders, and reduce the costs of design, construction, operation, and maintenance, we believe this will increase the accuracy of us achieving our goals.

"Mid-Term Management Plan 2020"

Establishing a business structure that can realize our long-term vision

Key measures

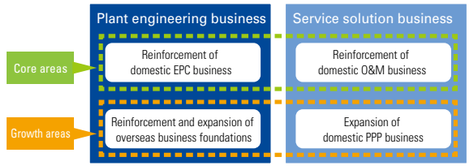
1 Expansion of strategic development investments

Enhancing development of products, solutions, and new businesses that are essential for medium- to long-term growth

- Promoting a management structure based on economies of scale to enable more comprehensive and wider area business operations
- Reducing construction costs by adopting leading-edge technologies such as AI and ICT, streamlining maintenance, and improving safety
- Developing topline products and new businesses
- Creating added value through work-style reforms

2 Strengthening and expanding business

Promoting efforts to strengthen core areas and expand growth areas



3 Engaging in continued ESG initiatives

Promoting activities that contribute to the environment and local communities, as well as actively strengthening corporate governance

- Promoting the reduction of environmental burdens and contributing to the environment through business activities
- Expanding environmental education and activities that contribute to local communities
- Working on BCM and improving the effectiveness of BCP
- Further streamlining and strengthening the management structure
- Promoting proactive communication with stakeholders

Goals of the Mid-Term Management Plan

(Consolidated)	FY Ended March 2019 (Results)	FY Ending March 2021 (Target)
Orders received	123.8 billion yen	140 billion yen
Sales	117.3 billion yen	128 billion yen
Operating profit	7.6 billion yen	9 billion yen
Net profit	5.2 billion yen	6.2 billion yen
ROE	9.1%	10.0% or more

——What is the significance of having sales of 200 billion yen in the long-term vision?

METAWATER Group's long-term vision is to achieve sales of 200 billion yen for the 20th anniversary of the company (year ending March 2028).

Sales for the French company Veolia, considered one of the world's largest companies in the water business, is about 3 trillion yen, while the French water company Suez has sales of 1.4 trillion yen, and the UK's Thames Water has sales of 300 billion yen. The METAWATER Group is currently ranked about 30th in the world, but if our sales can reach 200 billion yen, we will enter the top 10.

In a few years, a cycle will come where demand will increase for the renewal of facilities and plant equipment we delivered in the early 2000s. In addition, bids will increase for projects taking advantage of PPP and PFI, such as those represented by concessions, and M&A will be required both in Japan and overseas.

At that time, it will be important for us to be prepared for making new proposals and establishing business management systems unique to our company so that we can achieve our long-term vision.

——Public-private partnerships (PPP) are a growing area and are expected to intensify competition. Please describe what measures you'll take to differentiate yourself in the future and to secure profits.

As PPP and concession projects increase, numerous companies will enter the field and competition may increase. However, we're striving to improve profitability by promoting the three centers concept, operating using AI and ICT, streamlining maintenance and management, and reducing costs.

The three centers concept is centered around the "Training center for facility operators", "Supply center for parts", and "Knowledge center", which are bases for educating local operators, simplifying procurement by sharing necessary parts, and improving operational efficiency by sharing knowledge, experience, and know-how, respectively.

Through these, we are keeping all of our water and environmental infrastructure data stored in the WBC (Water Business Cloud) and building systems to improve the efficiency of operations and management, which up to now has relied on people's experience and intuition. Such systems will include "wide-area monitoring" of data such as the operational status of each facility, water level, water quality, water pressure, etc., and optimizing "asset management" by consolidating data such as operations, failures, and maintenance information of facilities and equipment owned by local governments.

In the future, advancement of AI and Cyber Physical Systems (CPS)*1 will allow us to predict the rainfall and flow of rainwater in a region, making it possible to made advanced judgments and giving instructions such as where and in what order sluice gates should be closed so that we can control the flow of water into equipment.

In addition, each local government has different circumstances depending on location, such as mountainous areas, beaches, river basins, urban areas, rural areas, and climate and weather as well, such as if it is a cold or warm area, if there is heavy snow or rain, etc. Hence, we want to incorporate the concept of "resilience", that is, recovery and restoration, into the infrastructure.

One thing I realized after the Great East Japan Earthquake in 2011 was that there is no infrastructure that will never fail. Additionally, heavy rains and floods in western Japan during the summer of 2018 resulted in tremendous damage to the water infrastructure for the various regions affected. That is why an important point in the philosophy for infrastructure development that we are currently working on should be to "think about how quickly we could recover

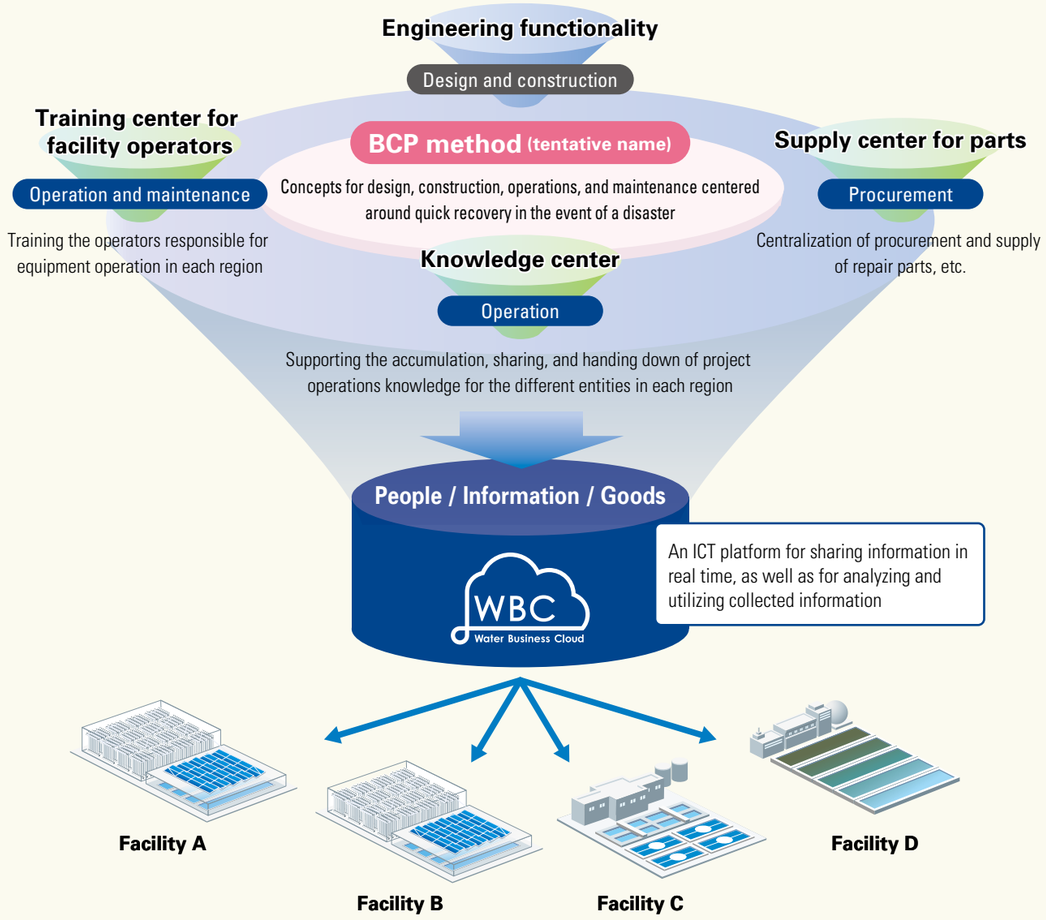
Response training in the event of a major earthquake

Training on sharing information between our head office and the Kyushu Office using video conferencing systems and the WBC

*1 Services and systems that analyze events traditionally dependent on experience and intuition, using them for effective operation

■ Promoting a management structure based on economies of scale to enable more comprehensive and wider area business operations

In order to respond to the increasing need for further comprehensiveness and wider area management, the ICT platform will be further expanded, and various systems will be constructed, including a system for training operators in charge of operating equipment in each region, a system for supporting the accumulation, sharing, and handing down of project operations knowledge for the different entities in each region, and a system unifying the procurement and supply of repair parts, etc.



Training center for facility operators

Currently training human resources responsible for facility operation throughout the country. Began constructing a universal design for daily inspections so that new operators can perform complex inspection tasks efficiently.

Knowledge center

The "Innovation center" was established on April 1, 2019. Under that umbrella, "knowledge center" functionality has been established to accumulate, share, and hand down project operations knowledge.

Supply center for parts

The "Supply center for parts" promotes the centralized organization and management of parts information, allowing the optimization and sharing of parts held.

from a disaster". Infrastructure equipment is often required to be robust, but for plant design and development in the future, we will focus on resilience, differentiating ourselves and reducing costs.

——What is the outlook for overseas business, which is another growing business?

For overseas business, we believe that developing U.S. operations is our top priority. In January 2016, we made the U.S. water treatment engineering company Aqua-Aerobic Systems (AAS) a subsidiary. As a result, in addition to gaining a strong sales channel covering the entirety of the United States, we have also strengthened our product lineup in order to meet a wider range of customers' needs.
The U.S. is a large market with numerous competitors, and water- and sewage-related investments equal about 40 billion dollars a year. Many of the facilities there are quite old, giving us a lot of room to introduce our own equipment and facilities. Up to now, we have struggled in the U.S. due to different business customs compared to Japan, but with AAS at the center, I feel that we can now sketch out new strategies for growth.
On the other hand, the demand for water supply facilities is also increasing in emerging countries. In places such as Asia, we are promoting initiatives related to infrastructure development projects using Official Development Assistance (ODA). Overseas, there are several major companies that provide everything from water infrastructure facilities to operation services, and companies in China and South Korea are expanding their businesses leveraging low costs. Our aim is to expand business by taking full advantage of being "Japanese company-esque", something that can only be achieved by Japan and our experience with the Great East Japan Earthquake.

Mobile ceramic membrane filtration equipment

Delivering mobile water purifiers to emerging countries in Asia, Africa, etc., ensuring a safe water supply even in the event of a natural disaster

——What can you tell us about METAWATER's policies regarding the Sustainable Development Goals (SDGs) proposed by the United Nations?

Taking into account business characteristics and social missions, the Group is focusing on achieving three of the 17 SDGs: "6. Clean Water and Sanitation", "11. Sustainable Cities and Communities", and "17. Partnerships for the Goals".
We specialize in water and the environment, and so Goal 6, "ensure availability and sustainable management of water and sanitation for all ", and the "for all" part of that in particular, resonates deeply with us. The population with access to piped water in Japan is 97.9% (as of the end of 2016), and those with access to a sanitation system is high as well at 90.9% (as of the end of 2017). Globally, 2.1 billion people (about three out of every 10 people worldwide) do not have access to safe water at home, and 4.5 billion people (6 out of every 10) do not enjoy proper sanitation with regard to using the bathroom. That is why our goal is to ensure access to clean water and sanitation for all. We thus want to create a place where everyone can continue to live comfortably and with peace of mind. It is our belief that these efforts can only be achieved through partnerships with partner companies, citizens, local governments, and local companies. The nature of our business lends itself to social and environmental contributions. We are currently looking into specific initiatives that take advantage of METAWATER's unique abilities in order to achieve these three SDGs.

SDGs the METAWATER Group is focusing on

56% of Japanese companies are contributing to "Clean Water and Sanitation"

When asked about what SDG-based initiatives Japanese companies are currently taking and which of the 17 goals they are focusing on, results were similar to last year's survey, with 56% working toward "6. Clean Water and Sanitation" (the highest of all contributions). Following that was "9. Industry, Innovation, and Infrastructure" at 51%, and "7. Affordable and Clean Energy" at 35%.

Source: Keizai Koho, June 2019 "Questionnaire Regarding SDGs"

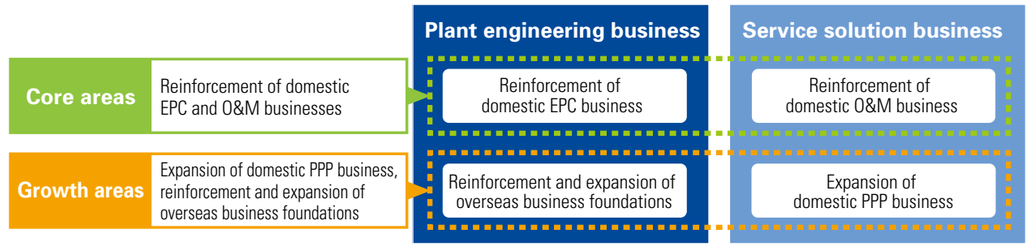
——Finally, do you have any message for shareholders, investors, and other related parties?

We are engaged in work to provide safe water not only to those in Japan, but to everyone all throughout the world. When thinking about the future development of the world, it is important to consider drinking water (water supply) and sanitation (sewage). As our business expands, we are confident that we will be able to contribute to the development of a prosperous and sustainable society.
Additionally, with regard to "ESG"*2 which have recently been attracting attention, we are actively engaged in activities to reduce our environmental impact and contribute to the community, which I think contributes to SDGs as well. Going forward, we will continue to operate our business contributing to the creation of a better society through collaborations with local governments, citizens, and partner companies. Thank you everyone for your continued support.

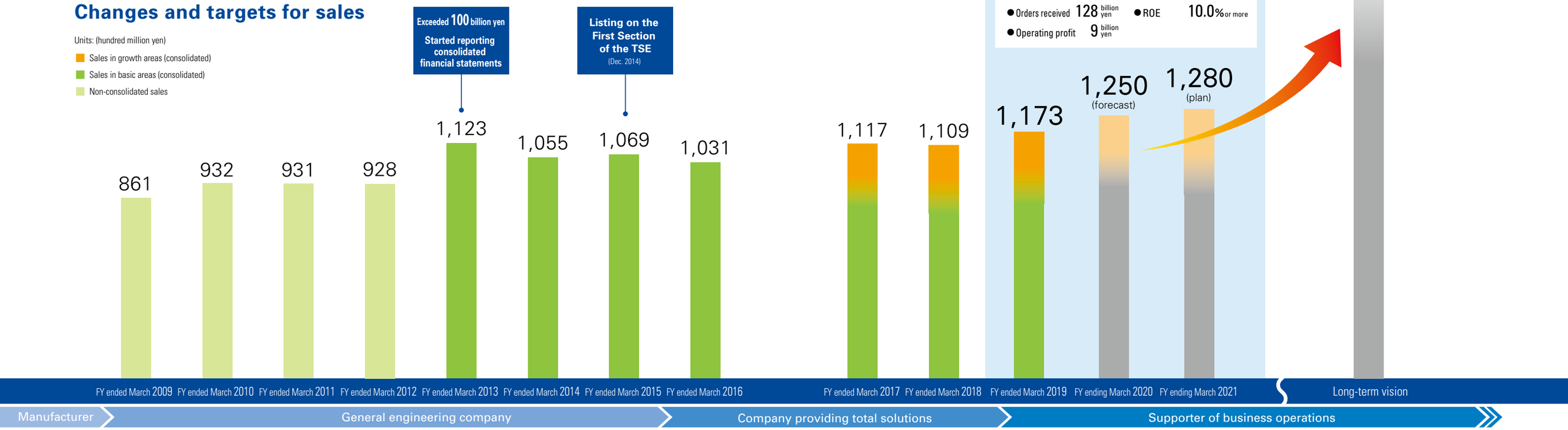
*2 Environmental, Social, and Governance.

Achieving our long-term vision

In the future, major environmental changes are expected in the domestic water and sewage market, including a further increase in the number of projects for further comprehensiveness and a growing demand for wider area management represented by concessions. In anticipating these changes, in April 2018 the METAWATER Group formulated the "Mid-Term Management Plan 2020" (FY ended March 2019 to FY ending March 2021) to strengthen our corporate structure. For the "Mid-Term Management Plan 2020", we are capturing Japanese demand for renewal of water and sewage facilities and reinforcing the domestic EPC business, while at the same time steadily increasing a stock business, the O&M business. We are also working to achieve our long-term vision by expanding the domestic PPP business, which is positioned as a field for growth, and reinforcing and expanding overseas business foundations through regional and partnership strategies.



Changes and targets for sales



History

2008

April

METAWATER Co., Ltd. was established in a merger between NGK Water Environment Systems, Ltd. and Fuji Electric Water Environmental Systems Co., Ltd.

2009

July

Environmental business of Kurimoto Technos was transferred to METAWATER

2011

April

A new business called the Water Business Cloud (WBC) was launched to support the water and wastewater business

2013

January

METAWATER USA, INC. was established in the United States as the first overseas subsidiary of our group

March

Domestic water, sewage, and environmental business partnership with Suido Kiko Kaisha, Ltd.

April

Head office relocated to Kanda-sudacho, Chiyoda-ku, Tokyo

June

Undertaking capital increase of System IO Co., Ltd. an affiliated company of Nihon Suido Consultants, Co., Ltd.

Business partnership with Kokusai Kogyo Co., Ltd. in domestic and international supply water/wastewater businesses.

Business partnership with PWN Technologies B.V. (the Netherlands)

August

Partnership in capital and business tie-up with Rood Wit Blair Holding B.V. (the Netherlands) by undertaking third-party allocation of shares

October

Started providing the "Smart Field Service", a water and sewage infrastructure management service, in collaboration with Fujitsu Ltd.

2014

April

Established HyBrid Chemical Co., Ltd. in the chemical business based on joint investment with Tsukishima Technology Maintenance Service Co., Ltd., a subsidiary of Tsukishima Kikai Co., Ltd.

September

METAWATER TECH Co., Ltd. was established to conduct maintenance and management of water and wastewater facilities

December

The Group was listed on the First Section of the Tokyo Stock Exchange

2015

April

METAWATER collaborates with NTT DATA in the services field for the water and wastewater business

2016

January

Converted Aqua-Aerobic Systems, Inc. (AAS), a U.S. water treatment engineering company, into a wholly owned subsidiary

AQUA-AEROBIC SYSTEMS, INC.
A Metawater Company

2018

March

Partnership in capital and business tie-up with SkySeeker Co., Ltd. by undertaking third-party allocation of shares

October

Established investment quotas for venture companies, etc.

December

Strengthened strategic alliance with the Dutch company PWNT

Highlights of consolidated financial results

Summary of operating results for the fiscal year ended March 2019

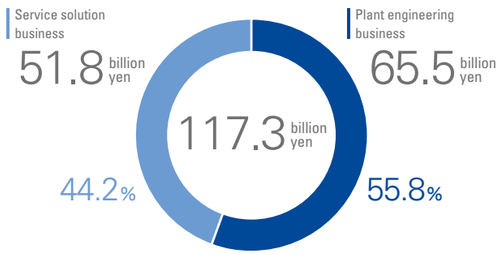
Profit and loss

- Since the fiscal year ended March 2016, sales have not increased and profit levels have declined due to long delivery times, an increase in large-scale projects, a delay in the timing of recording sales for certain projects, etc. However, the order backlog increased, reaching an all-time high for the fiscal year ended March 2019, building a foundation for medium- to long-term growth.
- The fiscal year ended March 2019 was the first year of the "Mid-Term Management Plan 2020". Thanks to the contributions from sales of projects with long delivery periods for which orders have been received, and increases in completed projects of highly profitable construction, we achieved increases in operating profit, ordinary profit, and net profit after implementing strategic development investments for the future. This has allowed us to ensure a sound level of performance recovery. Orders received were at their second highest level ever, following the record highs achieved in the fiscal year ended March 2018.

Financial

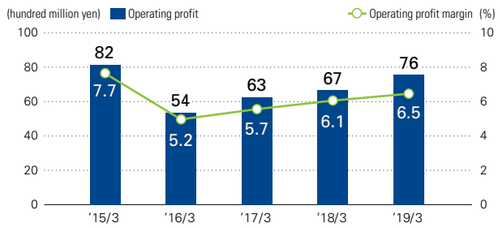
- Total assets increased as a result of the conversion of Aqua-Aerobic Systems, Inc., a U.S. water treatment engineering company, into a wholly owned subsidiary in January 2016, and consolidation with the balance sheets in the fiscal year ended March 2016. Additionally, the company was consolidated into the statement of income in the fiscal year ended March 2017, and the earning power of all companies has recovered. As a result, net assets have accumulated and the equity ratio remains high.
- "Current earnings per share", which is an indicator for profitability and growth analysis, has been showing an improving trend. "Book value per share", which indicates stability, has also steadily been increasing.

Sales composition (FY ended March 2019)



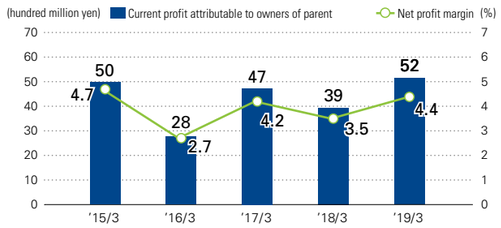
Operating profit / Operating profit margin

Operating profit 7.6 billion yen



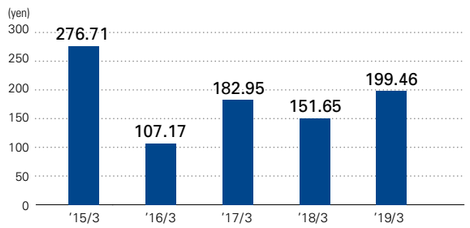
Current profit attributable to owners of parent / Net profit margin

Current profit attributable to owners of parent 5.2 billion yen



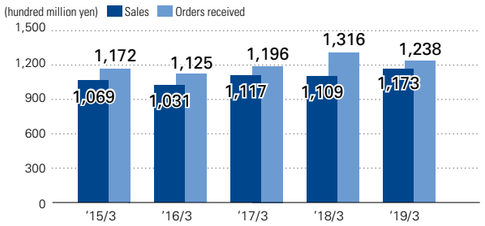
Current earnings per share

199.46 yen



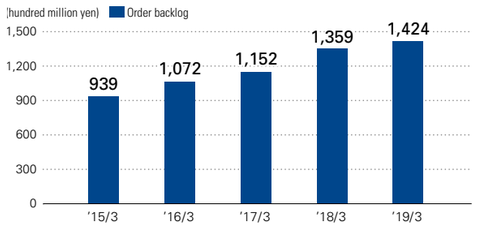
Sales / Orders received

Sales 117.3 billion yen



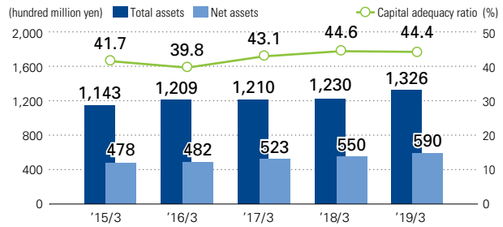
Order backlog

142.4 billion yen



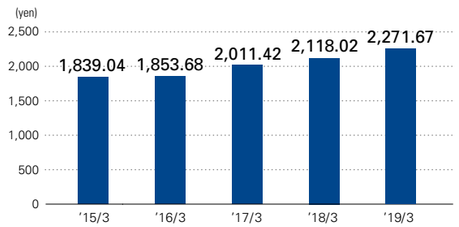
Total assets / Net assets / Capital adequacy ratio

Total assets 132.6 billion yen



Book value per share

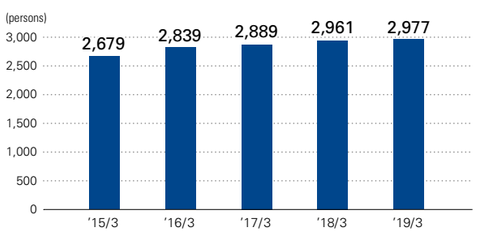
2,271.67 yen



Consolidated non-financial highlights

Number of employees

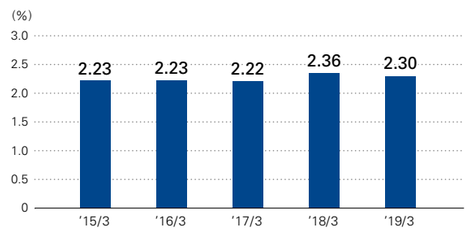
2,977 people



Percentage of employees with disabilities

(non-consolidated)

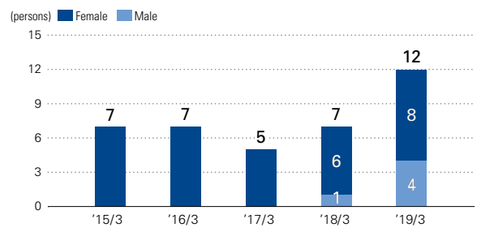
2.30%



Number of employees taking childcare leave

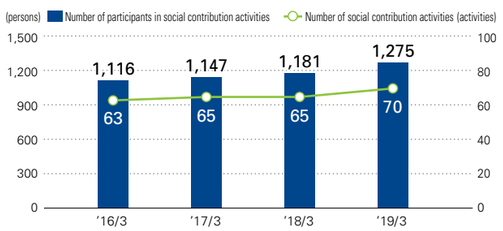
*100% rate of returning to work after taking childcare leave

12 people



Number of participants in social contribution activities / Number of social contribution activities

Increase in the number of participants in social contribution activities (FY ended March 2016 to FY ended March 2019) 114%

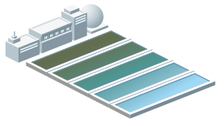


Contributing to developing water and environmental infrastructures, which serve as a lifeline for people and industry

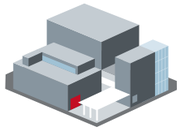
The METAWATER Group is one of the few water and environmental infrastructure companies with both mechanical and electrical technologies. Utilizing cloud services taking advantage of advanced ICT and maintenance and management know-how cultivated over many years, we propose all sorts of optimal solutions, from design and construction to maintenance and management.

Four businesses for achieving sustainable water and environmental infrastructure

Water treatment plants



Sewage treatment plants



Resource recycling facilities

We contribute to the development of infrastructure in the areas of domestic sewage treatment plants, and sustainable water and environmental and overseas water treatment plants, resource recycling facilities.

Service solution business

Sales **51.8** billion yen (44%)

Operating profit **4.4** billion yen

Operation and maintenance (O&M) business

Operates and maintains facilities and equipment

Number of facilities whose operation and maintenance are consigned to us *1 — Approx. **100** facilities

*1 Number of waterworks facilities (including PFI and DBO), sewage treatment facilities, and resource environment facilities being operated and maintained

Number of on-site staff — Approx. **1,200** people

Number of domestic bases — Approx. **30** facilities

Number of prefectures where WBC*2 has been delivered — **41** prefectures

*2 Water Business Cloud
METAWATER's original information and telecommunication technologies used for sharing information in real time, as well as for analyzing and utilizing collected information

Public-private partnership (PPP) business

Further comprehensiveness and wider area management of businesses are promoted through PPP

Number of public-private partnership (PPP) projects consigned*3 — **30** Water and sewage business fields projects / **62** projects in total

*3 Based on the Company's data

Plant engineering business

Sales **65.5** billion yen (56%)

Operating profit **3.2** billion yen

Engineering, procurement, and construction (EPC) business

Designs and constructs facilities and equipment

Number of facilities and equipment designed/constructed — More than **2,000** locations

Number of high-speed filtration systems delivered — **40** locations

Number of monitoring and control systems delivered — Approx. **300** locations

Overseas business

Provides solutions to water and environmental needs overseas

Ceramic membranes for large-scale water treatment plants installed — Approx. **10** locations

Large-scale ozone generation systems installed — Approx. **60** locations

Local bases/Partners — Approx. **20** locations

We will continue contributing to the preservation of local communities, society, and the global environment, while also increasing corporate value by solving water and environmental issues.

The METAWATER Group wishes to be a corporate group that is trusted by both partner companies and local companies, is highly regarded by local governments, and is requested by society. To that end, our aim is to continue contributing to the preservation of local communities, society, and the global environment, while at the same time increasing corporate value, though activities aimed at maintaining, improving, and sustaining water and environmental infrastructure, as well as CSR activities such as water and environmental conservation, awareness raising, and disaster recovery and support.

Issues faced by local communities and society

There are many diverse issues surrounding water and environmental infrastructure. The METAWATER Group is standing with local communities and society, offering up ourselves as a one-stop solution by working with people, technology, and information to solve these problems.

Domestic water and sewage market

- Decreases in local government revenue and shortages of engineers
- Aging facilities and equipment
- Natural disasters such as major earthquakes and heavy rains

Overseas water and sewage market

- Aging facilities and equipment in developed countries
- Stricter environmental regulations
- Increasing demand for infrastructure in emerging countries

Solutions to these issues

In the domestic market, the role of private enterprises is expected to grow as the need for further comprehensiveness and wider area management of the water and sewage businesses increases due to decreases in local government revenues and shortages of engineers caused by a decreasing population. In addition to the METAWATER Group's mechanical and electrical technology, operation and maintenance know-how, and abundant experience with public-private partnerships, we are working on solving these issues by building our own ICT platform and management system.
In the North American and European markets, we are developing businesses centered around group companies and partner companies, while in markets such as those of emerging countries we are promoting initiatives tailored to the local needs.

Contributing to society, the global environment, and SDGs

Through our business and CSR activities, the METAWATER Group will not only improve corporate value, but also contribute to the sustainable development of local communities and society as well as the preservation of the global environment. Additionally, by taking the business characteristics and social responsibilities of the Group into consideration, we will contribute to the achievement of the following three of the 17 SDGs.

Created value

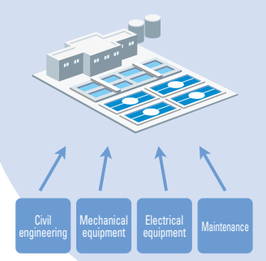
The METAWATER Group strives to achieve sustainable corporate value through business and CSR activities, and to achieve the following quantitative goals set as our long-term vision.

- Sales (consolidated) **200** billion yen
- Overseas sales (consolidated) **20** %
- Corporate value **100** billion yen

Partnerships

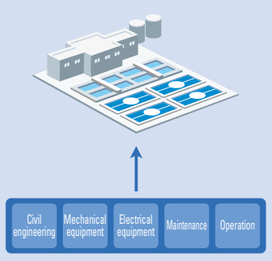
For the domestic market, in promoting PPPs we will strengthen partnerships with companies having complementary relations through "further comprehensiveness + wider area management". In the European and North American markets, we plan to work on expanding business and creating synergies centered around group companies and partner companies, promoting partnership strategies with M&A in mind. In other regions, we will promote PPPs utilizing ODA, yen loans, etc., to meet local needs.

Traditional method



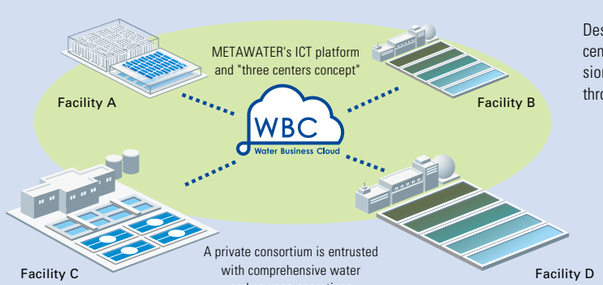
The primary roles of private companies are facility design, construction, and maintenance (inspections and maintenance), ordered individually for each piece of equipment. The local government is responsible for operating the facility. The METAWATER Group is entrusted with the design, construction, and maintenance of mechanical and electrical equipment.

Further comprehensiveness



Facility design, construction, maintenance (inspections and maintenance), and operations are comprehensively ordered to a private consortium. The METAWATER Group acts as a representative of that private consortium, promoting efficient management through overall optimization with partner companies and local companies.

Further comprehensiveness + wider area management



Design, construction, maintenance, and operations of multiple facilities are centrally ordered to a private consortium. A typical example of this is concessions. The METAWATER Group aims for efficient and sustainable operation through its original ICT platform and the "three centers concept".

Promoting development of products and solutions for medium- to long-term growth

The METAWATER Group is working on solutions for a new generation, integrating our Group's strengths in mechanical and electrical technologies, joint research, open innovation with partners, etc., with the goal of more advanced technological development that will help sustain infrastructure and improve operational efficiency.

New technologies — Water environment controller "ZLS"

Achieving the high level of availability and environmental resistance required for water environments

We have developed "ZLS", a controller for water environments that supports the optimization of operation, maintenance, and engineering of ever-more advanced and ever-more complicated water and sewage facilities.
"ZLS" has improved specifications from previous models, including an increased CPU processing speed, reduced instruction execution time, and increased program capacity. It also has application compatibility and allows for smooth inheritance of program libraries when updating the water environment control system.

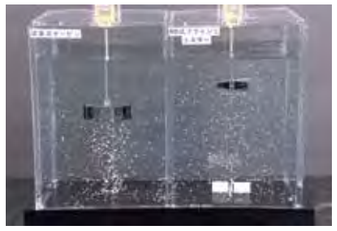
ZLS

New technologies — High performance digester mixer

Technological quality and performance evaluated as contributing to environmental preservation and promotion of the environmental equipment industry

We developed a sludge digestion system* that stably generates combustible gas by installing four paddle vanes in the sewage sludge digester and a radial blade at the bottom of the tank, generating a circulated flow in the tank and allowing methane fermentation to be carried out efficiently.
The combustible gas is used by gas turbines, etc., to generate power, contributing to reduced maintenance and management costs for treatment plants, reduced LCC, etc.
This technology won the Chairman's Award at the 45th Outstanding Environmental Systems Awards hosted by the Japan Society of Industrial Machinery Manufacturers.

*Jointly developed with Satake Chemical Equipment Mfg., Ltd.



Mixer model

New technologies — Emergency ceramic membrane filtration system

Utilizing a ceramic membrane, one of our flagship technologies

We decided to develop a portable emergency ceramic membrane filtration system, and so we created a prototype.
This system uses the know-how cultivated through the engineering of the in-vehicle ceramic membrane filtration equipment supplied to Africa and Southeast Asia to improve both usability and portability in the event of an emergency or disaster. In addition to lending these free of charge to local governments, we are planning to also deploy them at our domestic bases so that we can flexibly lend them to others in an emergency.

Prototype unit

Recycling technology — Vertical high-speed crusher

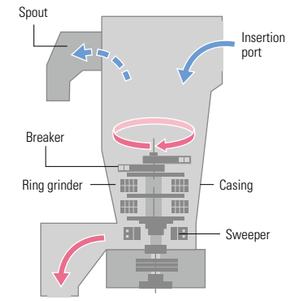
We developed a vertical high-speed crusher that crushes incombustible and bulky waste down to a particle size that can be easily recycled

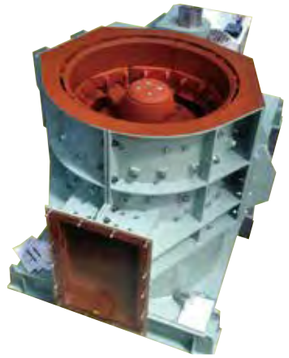
With the enforcement of the Act on Recycling of Specified Kinds of Home Appliances, home appliances must be recycled by manufacturers. Large household appliances, which traditionally had been crushed and sorted at bulk garbage treatment facilities, are no longer collected. Crushers suited to the treated materials are desired, and so we have developed a resource recycling facility that efficiently recycles waste with saving space.

Comparison with conventional horizontal equipment

- Downsized for reduced installation volume
- Large bulk specific gravity of the crushed material, increasing transportation efficiency
- Reduced motor capacity due to downsizing
- Reduced maintenance costs

Sorting mechanism





Vertical high-speed crusher

AI / ICT — Cutting-edge technology initiatives

Utilizing cutting-edge technology to respond to an era of population decline, contributing to securing the labor force and improving safety and productivity

Trial use of drones for facility inspection

We have been conducting surveys and research regarding the use of drones for maintenance, etc., of water supply and sewage infrastructure (water sources, pipelines, pipeline facilities, facilities at water treatment plants, facilities at sewage treatment plants, discharge rivers, etc.). We will be holding demonstration experiments to see if drones can be used to perform operations that had previously required people to enter hazardous areas directly.

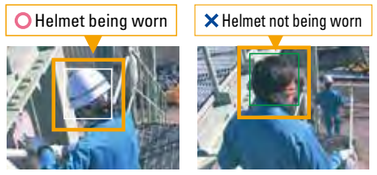
Example demonstration experiments

- Investigating and measuring the conditions of various water sources and discharge rivers
- Diagnosing deterioration and aging of facilities
- Aerial survey of facilities on high ground

Image recognition technology utilizing AI

We have built a system that can frame and detect equipment and objects necessary for ensuring safety at construction and maintenance sites.

Recognize if helmets are being worn or not, manage workplace safety



Monitoring for intrusion into hazardous areas

B-DASH Project*1

*1 Innovative sewage system technology demonstration project sponsored by MLIT

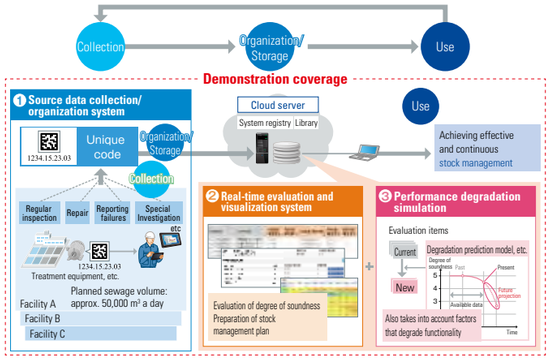
ICT technology (FY2018 B-DASH Project)

Demonstration research of continued stock management realization system technology in a cloud environment with maintenance data as original sources

Supporting the establishment of effective stock management amid the ever-increasing number of aging facilities

We have demonstrated that continuous stock management can be achieved through an ICT platform and cloud system that makes it possible to effectively collect, organize, store, and use the maintenance data generated in day-to-day operations.

Demonstrators: Joint research group organized by METAWATER Co., Ltd., Ikeda municipal government, Ena municipal government
Demonstration areas: Sewage Treatment Plant in Ikeda City, Osaka, Water Purification Center in Ena City, Gifu, and five other facilities
Demonstration years: FY2018 - FY2019



Characteristics of this technology

1 Source data collection and organization system	Efficiently collect, organize, and store various types of maintenance data at various locations through centralized management
2 Real-time evaluation and visualization system	The system allows continued evaluation and visualization of the level of soundness based on collected and organized maintenance data
3 Performance degradation simulation	Create models predicting long-term changes in equipment operating performance and introduce a probabilistic distribution for future equipment performance to help determine optimal timing of measures

With the above three component technologies formed in a cloud environment, maintenance data generated through day-to-day operations are used to prepare various plans, thereby achieving effective and continued stock management.

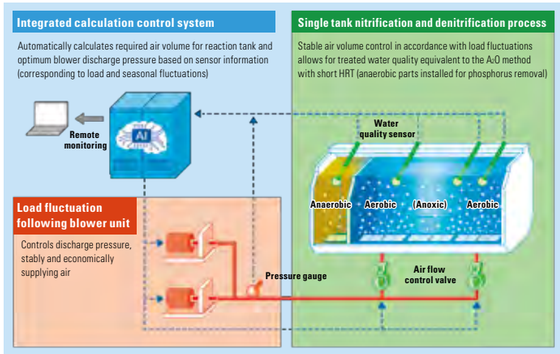
Sewage technology (FY2019 B-DASH Project)

Demonstration research for advanced treatment technology through ICT and AI control of single tank nitrification and denitrification process

Realizing short HRT advanced processing, reduced energy use, and reduced maintenance burden

This technology achieves a treated water quality equivalent to the A_2O method with short HRT by controlling the air volume corresponding to fluctuations in the reaction tank inflow load. At the same time, by using ICT and AI for integrated management, the optimal discharge pressure for the blower is calculated from the required air volume in real-time, and the discharge power is reduced by controlling the discharge pressure.

Demonstrators: Joint research group organized by METAWATER Co., Ltd., Japan Sewage Works Agency, and Machida City
Demonstration areas: Naruse Clean Center (Machida City, Tokyo)
Demonstration years: FY2019 onward



Characteristics of this technology

1 Realization of short HRT (retention time) through air volume control using ICT	Flexible formation of aerobic and anoxic zones in accordance with loads using ICT*2 *2 NOx and NH_4 meters are used in this technology
2 Realization of equipment cooperation through the utilization of ICT and reduced blowing power through pressure optimization	Calculating the optimal blower discharge pressure from the required air volume in real-time, the discharge pressure is controlled
3 Realization of reduced operation adjustment burden by responding to seasonal fluctuations, etc., using AI	Control parameters for required air volume calculations are automatically tuned using AI (machine learning functions)

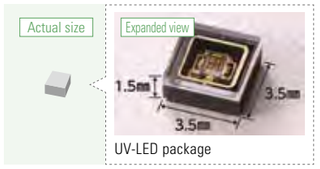
Development technology

Water technologies

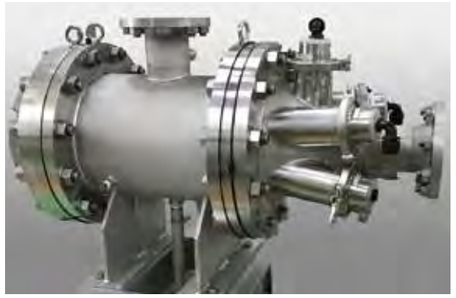
LED UV irradiation equipment

Long service life with reduced maintenance costs

In addition to adopting the world's highest rated high-power UV-LED as a light source, a lifespan approx. 3x that of ultraviolet mercury lamps has been achieved by controlling UV-LED output, optimizing irradiation, etc. The 300 m^3/day and 1,200 m^3/day water treatment volume models developed so far have received the Certificate of the JWRC Standard Conformity of Ultraviolet Irradiation System by the Japan Water Research Center (JWRC).



UV-LED package


External appearance of equipment (MWLED series)

Sewage technology

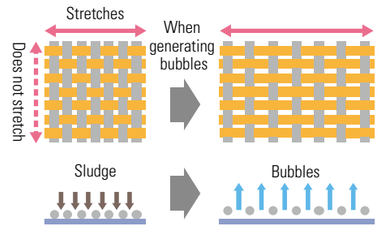
Low pressure loss membrane diffuser (cloth diffuser)

Diverse operation by enabling intermittent operation

A cylindrical diffuser made of stretchable fibers that generates fine bubbles from numerous gaps in the texture, reducing the amount of air by increasing oxygen transfer efficiency. Since it is a low-pressure-loss type, blower discharge pressure can be kept low, reducing power costs. Additionally, replacing just the diffuser itself is simple and it has excellent maintainability.


Cloth diffuser

Air diffusion system




Cloth diffuser (during aeration)


Photo of the bubbles

Promoting basic research on ceramic membranes with universities

In order to suppress membrane fouling (clogging) associated with the continued use of ceramic membranes, we are conducting basic research on the introduction positioning relationship between coagulation, which is the pre-treatment, and ozone treatment, as well as on removability of biopolymers*3. For this research we received the Encouraging Prize in 2017 from the Society of Environmental Instrumentation Control and Automation together with our joint search partner, Gifu University.

*3 It has been suggested that these substances are involved in membrane fouling.


Award ceremony


Ceramic membrane

Strategy for the future

Plant Engineering Division

We will bring new value and contribute to achieving a sustainable society.

The Plant Engineering Division is engaged primarily in the design and construction of mechanical and electric equipment for water treatment plants and sewage treatment plants at home and abroad, as well as the engineering, procurement, and construction of a variety of devices used with the equipment. METAWATER is a unique corporation with expertise in both mechanical and electric technologies. We design and construct eco-friendly plants incorporating energy-saving, energy-creation technologies, etc. using electric technologies that maximize our unique mechanical technologies and capabilities. Combining mechanical and electric technologies and product development expertise, we develop efficient water treatment plants and sewerage treatment plants, save energy, and efficiently use resources.

Director, Senior Executive Officer
Executive General Manager of Plant Engineering Division
Noboru Okuda

Major activities

- Given the frequent occurrence of local heavy rainfalls in recent years, we identify rain clouds using radar installed on high ground, detect cumulonimbus clouds at an early stage, and project rainfalls to mitigate flood damage. In addition, we work to improve confluences of rainwater and wastewater with high-speed membrane filtration technologies, which contribute to elevating water quality in rivers and marine areas.
- As facilities continue to age and the population continues to decline, we are working on joint research with the Japan Sewage Works Agency to spread alternative technology for the primary sedimentation tank, which can save space, in order to respond to the growing needs for consolidation of facilities and treatment plants.
- We are proposing a number of energy solutions, including various power generation technologies utilizing waste heat from digestion gas emitted through processes of sewage treatment and sludge incineration treatment.
- We are contributing to building local communities that offer comfortable lives through a disaster rehabilitation project on the coast of the Tohoku region.

Internal meeting of engineers

SDGs being promoted

Implementing leading-edge technologies, including advanced water-quality improvement technologies, energy-saving technologies, and clean energy power generation for degraded water purification plants and sewage treatment plants enables stable supplies of safe and clean water of sufficient quality and capacity through plant construction.	3, 6, 7, 14
Constructing sustainable plants with downsized technologies in response to a social environment with falling populations and super-aging societies	9, 11
Developing technologies and supplying solutions for increasing sewage inflows due to abnormal weather such as heavy rainfalls	13
Engaging in disaster rehabilitation work centered on the coast of the Tohoku Region and contributing to building sustainable local communities by improving the water environment	8, 9, 11, 14

Future developments

Looking at trends over the next 10 years, we will have to respond to significant environment changes, expansion of PPP projects, a serious shortage of engineers and aging facilities, evolution and expansion of IoT and AI, and development of work-style reforms. To respond to changing social and customer needs driven by these changes in the business environment, the Plant Engineering Business Headquarters will take up the challenge and pursue optimal engineering, procurement, and construction, and bring about new value, thus contributing to achieving a sustainable society.

Project Topics

Business topics Renovation of water treatment facilities at the Komatsu City Central Purification Center

Introduction of intensive solid-liquid separation technology* as an alternative to the primary sedimentation tank

Komatsu City Central Purification Center

Valve room for high-speed filtration equipment

The Komatsu City Central Purification Center water treatment facilities (Komatsu City, Ishikawa Prefecture), which were renovated through a joint venture being represented by METAWATER, began operation in November 2018. We have introduced our high-speed filtration system as an alternative to the primary sedimentation tank, which has had an effect on improving simple treatment performance in clear and rainy weather. This has realized a reduction in space used and eliminated construction costs for confluence improvement facilities.

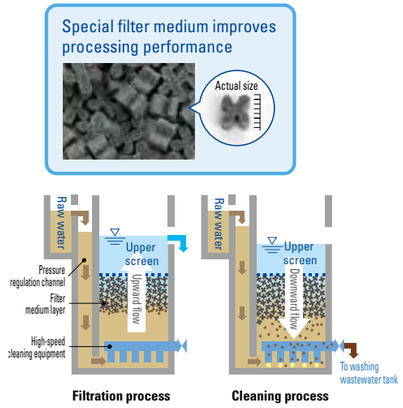
*This technology was developed from joint research between METAWATER and the Japan Sewage Works Agency for the innovative sewage system technology demonstration project (B-DASH Project) led by the Ministry of Land, Infrastructure, Transport and Tourism in FY2011. It has been empirically studied as a commissioned study by the National Institute for Land and Infrastructure Management, and is part of technology that has been evaluated by experts. This will be the first introduction case in Japan since the Institute has formulated the technology introduction guidelines.

Renovation of water treatment facilities at the Komatsu City Central Purification Center (machinery)
〃 (electrical equipment)

Contract applicant: Komatsu City, Ishikawa Prefecture
Address: Site in Tsurugashimamachi, Komatsu City
Construction period: March 13, 2017 - March 29, 2019

B-DASH Project adoption technology put into practical use

Intensive solid-liquid separation technology (alternative to primary sedimentation tank/confluency improvement)



Space-saving installation and simple maintenance

Technology that efficiently removes foreign substances and BOD, SS, etc., using an original filter medium. Can be installed as an alternative to existing primary sedimentation tanks, taking up less space and improving the amount of water that can be treated without adding equipment. Simple cleaning and maintenance reduces maintenance costs and contributes to lower energy usage.

Can also be used to improve confluency

In rainy weather, it is possible to improve confluency and reduce the pollution load on rivers and seas by filtering the increasing amount of sewage and discharging it into the river after disinfection. This also combats direct discharge of untreated sewage, which is a social issue.

Ensure water treatment functionality in the event of a disaster

Excellent earthquake resistance and BOD/SS processing performance, making it effective for BOD response measures thanks to sedimentation/sterilization and primary processing in the event of a disaster.

Service Solution Division

We will continue to create and offer new services that contribute to sustaining water and environmental infrastructure.

The Service Solution Division is engaged in business activities that include inspection, repair, operation, and maintenance of mechanical and electric equipment of domestic water supply and sewage facilities, as well as design, construction, operation, and maintenance of waste treatment facilities (bulk waste, incombustible waste, and recyclable waste). Given a domestic water supply and sewage business facing degradation of facilities and equipment, there are high expectations of private companies when local governments are experiencing financial squeezes and there are shortages of engineers and staff to operate and maintain facilities. The Service Solution Division provides services through networks run by 30 operating bases across the country. Our services are oriented toward customers in local communities. For instance, if a customer experiences an emergency, such as a failure or problem with mechanical and electric equipment, we visit them immediately to provide support.

Senior Executive Officer
Executive General Manager of Service Solution Division
Makoto Shimizu

Major activities

- We provide wide-area administration services for facilities, based on the Water Business Cloud (WBC) using IoT and cloud computing technology, and registry services for equipment and devices to support asset management.
- We are continuously proposing optimization to realize reduced energy usage, automation, reduced need for human personnel, etc., through the introduction of cutting-edge technologies such as AI and ICT.
- We strive to strengthen partnerships with local companies in order to offer more stable and local-community oriented services.

Maintenance management operation using WBC

SDGs being promoted

Contributing to generating and supplying safe and clean water by maintaining the functions of clean water treatment equipment and devices	6, 11, 17
Contributing to stable operations by maintaining the functions of sewage treatment equipment and devices (maintenance of discharged water quality)	6, 11, 14
Supporting innovations and energy-saving maintenance operations by offering new technologies and new services, such as automated unmanned operation	7, 9
Services for WBC-based and SaaS-type operations (providing software and software operating system environment through a network)	9, 12
Design and operation of waste treatment facilities with functions attached which enable local residents to address the importance of reducing and recycling waste, and supporting their education and encouragement	4, 11, 17
Reinforcing the service solution business through partnerships with local companies	17

Future developments

In the future, in addition to conventional maintenance services, we will continue to provide new services including a variety of outsourced services related to stock and asset management, along with expanding PPP projects.
We will strengthen and actively promote partnerships with local companies and governments by proposing profit-sharing systems that return profits from the sale of recyclables (metals, cans, plastic bottles, etc.) generated during the waste disposal process to local governments, basic equipment improvement projects that prolong service life without needing to close old waste treatment facilities, etc.

Project Topics

Business topics Shitomogawa Purification Center facility inspections, operation monitoring, etc.

Establishing the last new sewage treatment plant in Japan, with the EPC and service departments working together to obtain a long-term contract for maintenance, inspection, and monitoring

Shitomogawa Purification Center

Shitomogawa Purification Center
Outline of facility inspections, operation monitoring, etc.

Facility name: Mie Prefectural Sewerage Management Public Corporation
Shitomogawa Purification Center
Business details: Facility inspections, operation monitoring, etc.
Contract period: April 1, 2019 - March 31, 2024

As expectations placed on private companies in the water and sewage businesses increases, METAWATER is receiving large-scale orders that encompass everything from design and construction to operation and maintenance. Additionally, for EPC projects that were initially commissioned just for design and construction, there are an increasing number of cases where operation and maintenance work is ordered as well after construction.

This is thanks to collaboration between the EPC department, handling design and construction, and the service department, handling operation and maintenance. Working together with the service department from the design stage allows proposals to be made that consider all aspects of on-site operation, including ease of use, efficiency, and safety.

METAWATER SERVICE Co., Ltd. is the service department from the design stage, and also works on central monitoring and control facilities as well as substation facilities for the Shitomogawa Purification Center, which is said to be the last new sewage treatment plant in Japan, completed in March 2018. Adopting a site-friendly maintenance management proposal, since the start of operation in April 2018 we have been commissioned for a long-term period (5 years) to operate and maintain water and sludge treatment facilities using ICT.

Strengths of the METAWATER service business

The know-how for starting up new treatment facilities

In the past few decades, there have been almost no new sewage treatment plants in Japan, making the experience of starting up a sewage treatment plant from scratch invaluable.
Several years ago, METAWATER set up a new treatment plant in Aichi Prefecture, and that experience and know-how have been put to great use with the Shitomogawa Purification Center, enabling a smooth start to operations.

Collaboration between the EPC (design and construction) department and service department

For design and construction, the service department, which handles operations and maintenance, conveys opinions related to safety, operability, etc., from the on-site viewpoint to the EPC department, working from the design and proposal stage as a united "TEAM-META" with the company acting as one.

TEAM-META

METAWATER — METAWATER Co., Ltd. — EPC (design and construction)
×
METAWATER — METAWATER SERVICE Co., Ltd. — Operation and maintenance

Maintenance utilizing ICT

METAWATER's cloud service WBC has a Smart Field Note feature for daily inspections. With this, smart devices are used for efficient operation and maintenance.

Emergency response capabilities

24h 365day 60min

In order to deal with potential accidents and trouble at night and during holidays, we have established a system that allows for emergency dispatch 24 hours a day, 365 days a year. A representative will arrive at the Center within an hour of receiving the dispatch request.

International Business Division

Contributing to solving the world's new water environmental problems through a focus on localism

The International Business Division aims to develop business focusing on providing METAWATER's unique and differentiated products and technologies to countries all around the world, including Asia, where future market expansion is expected, and centering on North America and Europe, where environmental regulations are becoming increasingly strict. In order to accomplish this, we strive to maintain a focus on localism.
We participate in the global water business, which is expected to expand in the future, by promoting the localization of bases and delivering products and technology customized to meet local demands and environmental changes, allowing us to become a reliable presence in the regions we're working in. We are also contributing to the development of the water environment in various regions all throughout the world, as well as to SDGs from the viewpoints of improving sanitary conditions, creating a comfortable place to live, and fighting global warming.

Executive Officer
Executive General Manager of International Business Division
Ken Akikawa

Major activities

- In North America, Aqua-Aerobic Systems, Inc. (AAS) became a subsidiary of METAWATER in 2016, and has developed differentiated technologies with an impressive presence, including a sequencing batch sludge system, cloth media filter, and Aqua Nereda , an aerobic granule sewage treatment technology. It has a stable revenue base with a sales network covering the entire United States. Additionally, we are gradually developing our own water treatment technologies, ozone generation systems, and ceramic membrane filtration systems with AAS at the core.
- In Europe, we are expanding the CeraMac system worldwide using our ceramic membranes together with the Dutch company PWNT. Based on the results we receive regarding introduction of this technology to water treatment plants in the Netherlands, England, Switzerland, and Singapore, we will promote the expansion of water treatment technology using our technology by strengthening strategic cooperation with PWNT.
- In Asia, we delivered the first machine of an advanced energy-saving sewage treatment system, which has been acknowledged as overseas-oriented technology by the Japan Sewage Works Agency, working toward realization of technology localization in emerging countries. Additionally, a representative office was established in Singapore with the primary purpose of conducting market research on the water environment, collecting the necessary information for future projects. Together with the representative offices already established in Hanoi and Phnom Penh, we aim to expand our business in the growing market of Asia.
- For other news, a total of 25 in-vehicle ceramic membrane filtration equipment were sold in six African countries and Southeast Asia. We have also been contributing to the development of local communities, receiving a letter of thanks from the government of Myanmar regarding use of this equipment during floods.

SDGs being promoted

Sale of sewage treatment devices and water purification devices in North America	6, 11, 14
Development of ceramic membrane filtration technology in cooperation with overseas companies	6, 11, 14, 17
Implementing advanced energy-saving sewage treatment systems in Asia	6, 11, 13, 14
Deployment of in-vehicle ceramic membrane filtration equipment	6, 11
Creating jobs and providing education through local companies, subsidiaries, representative offices, and projects in local areas	1, 8

Future developments

We will continue to promote localization, discover partner companies in various regions, and engage in dialogue with customers throughout the world so that all regions will take new water environment issues seriously. We will also create new value by taking advantage of our technology and experience. We will continue to contribute to the realization of a sustainable society by quickly detecting changes in the ever-changing global water environment and providing solutions.

Project Topics

Business topics Project for water quality improvement for Japanese Bridge area in Hoi An City, Vietnam

Cleaning the water of Hoi An, a city of world heritage, using Japanese water treatment technology

Hoi An sewage treatment facility

Lai Viễn Kiều (Japanese Covered Bridge)

In November 2018, we completed a sewage treatment facility*1 featuring the advanced energy-saving sewage treatment system, technology developed for emerging countries, in Hoi An, Vietnam. By improving the water quality around the "Lai Viễn Kiều (Japanese Covered Bridge)" area, which has a deep connection with Japan, we are contributing to an improvement in living and sanitation conditions, and preserving tourist attractions.

*1 This project was a joint venture between METAWATER and TSUKISHIMA KIKAI CO., LTD.

Interview with staff in charge

I served as the on-site lead for mechanical and electrical work.
What brought me the most joy was that our technology could contribute to improving the local water environment, and that I got to hear words of appreciation from the local residents.

Plant Engineering Division
Toichiro Sasaki

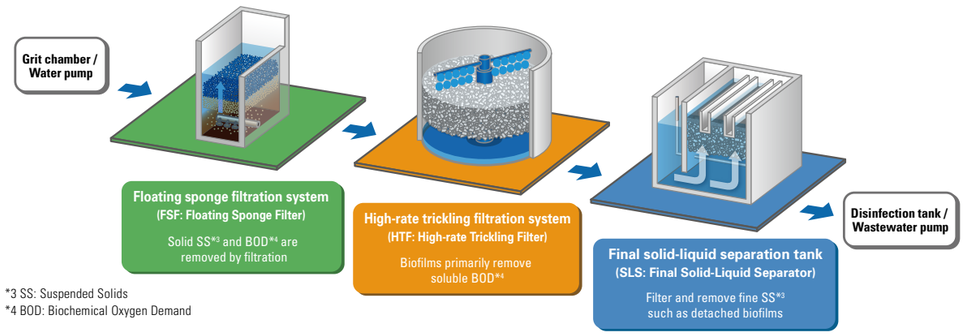
Developing a water treatment system that meets the needs of a country

Features of Pre-treated Trickling Filter (PTF) system, a technology developed for Southeast Asian countries

The PTF system is a technology developed for emerging countries through METAWATER's use of industry-academia collaborations, and has been acknowledged as "overseas-oriented technology*2" by the Japan Sewage Works Agency.
This technology was developed with the goal of improving regional water quality through sewage treatment, improving the living and sanitation conditions and contributing to the development of the local economy.

*2 The name of the system acknowledged as overseas-oriented technology by the Japan Sewage Works Agency is the "advanced energy-saving sewage treatment system", however this is synonymous with the "Pre-treated Trickling Filter (PTF) system".

System flow A system combining three of METAWATER's unique technologies



*3 SS: Suspended Solids
*4 BOD: Biochemical Oxygen Demand

PPP Division

We will focus on formulating a new business base as a front runner in the PPP business.

The Public Private Partnership Division promotes PPP projects in the Japanese water and sewage market. In Japan, we need to take early measures to resolve a string of issues including falling revenue and a lack of engineers in local governments operating water supply and sewerage projects, at a time where there are declining populations, degradation of facilities and equipment constructed during a period of high economic growth, and major earthquakes and torrential rainfalls. Since the implementation of the PFI Act in 1999, public infrastructure developments have been carried out through PPP using the capital, technologies, and know-how of the private sector. Furthermore, the Water Supply Act, which was revised in 2018, clearly calls for the promotion of wider area business operations, public-private partnerships, and more, making it likely that projects using the private sector are likely to expand further.

Executive Officer and Executive General Manager of PPP Division Masashi Sakai

Major activities

- We undertook the "Comprehensive Consignment of the Arao City Water Business, etc." in 2016, which was a consigned project package comprehensively covering areas from customer services to asset management for water supply facilities. When launched, this consigned project was the first in Japan to provide comprehensive
- In the same year, we also participated in a project related to a third-sector company, Kitakyushu Water Service Co., Ltd., with joint investments from the municipal government of Kitakyushu City, Fukuoka Prefecture, and six private companies, and are engaged in monitoring operations and centralized control of municipal water and wastewater facilities and other wide-area projects.
- In addition, we were consigned the Nakatsugawa City's comprehensive water supply consignment project (Gifu Prefecture) and other projects, and the consigned areas covered were expanded, including involvement in business operations for management and planning support and administration of water supply and sewage pipelines, which had previously been undertaken by local governments and governmental institutions. As a result, as a growing company, our consigned business areas offering total solutions have expanded.

Arao City BCP

SDGs being promoted

Activities ranging from design and construction to operation and maintenance of water treatment plants, including mechanical and electric equipment	6 11 17
We propose appropriate solutions tailored to local government issues, such as the transfer of technology and financial deterioration in the water and sewage business. A number of our unique value-added services for PPP projects are also proposed.	8 9 11
Execution of a Business Continuity Plan (BCP) in the event of a natural disaster such as water supply activities following the Kumamoto Earthquakes in April 2016.	9 11 14

Future developments

Amid increasingly expanding business areas that are expected to be covered by the private sector, we have positioned the PPP business as a growth area and seek to formulate a new business base targeting privatization and wide-area services in the water and wastewater businesses.

We have already participated in more than 30 PPP projects. In the future, we intend to promote the following three measures and work on business expansion as a front runner in the PPP market: (1) creating projects making use of a proposal system under the PFI Act; (2) improving efficiency and developing tools such as asset management tools using ICT; and, (3) promoting alliances and partnerships, and responding to wide-area services with comprehensive service packages.

Project Topics

Business topics Aizuwakamatsu City Takizawa Water Purification Plant Renovation Project

Renovating and maintaining a historic water purification plant in the Aizu region, building a fully integrated maintenance system "from intake to faucet"

Takizawa Water Purification Plant

The METAWATER Group has been entrusted with the Aizuwakamatsu City Takizawa Water Purification Plant Renovation Project in Fukushima Prefecture. This project was implemented using the DBO method*2, and the Takizawa Water Purification Plant is being designed and constructed by the METAWATER Group. Since April 2014, a SPC*3 "Aizuwakamatsu Aqua Partner Co., Ltd.", of which we serve as the representative company, has been managing the operation of water treatment plants in the City, including the Takizawa Water Purification Plant, as well as maintaining water transport and distribution facilities.

Taking advantage of our abundant amount of business achievements, we support the stable and continuous supply of safe, high quality water.

*2 DBO: An abbreviation for Design, Build, and Operate. An approach where private companies collectively handle facility design, construction, and operation and maintenance

*3 SPC: An abbreviation for Special Purpose Company. Companies whose purpose is to run specific business operations

Project summary

Project name: Takizawa Water Purification Plant Renovation Project
Project scope: Takizawa Water Purification Plant maintenance (design and construction)
Maintenance and operations from the water source to the faucet (including operation management of the cities four water treatment plants and one water treatment facility and maintenance management of water transport/distribution facilities in the City, through third party commission)

Design and construction period: April 1, 2014 - March 31, 2018
Operation and maintenance period: April 1, 2014 - March 31, 2033 (19 years)
Design and construction: METAWATER Group
Operation and maintenance: Aizuwakamatsu Aqua Partner Co., Ltd.

1,000 citizens participated in the commemorative "Water Festival" ceremony

In April 2018, a commemorative "Water Festival" ceremony was held to celebrate the completion of the Takizawa Water Purification Plant renovations in Aizuwakamatsu City. Approx. 1,000 people participated in the event, including the mayor of Aizuwakamatsu, Shohei Muroi, and other related parties. A tour was offered, wherein we were able to show off all the new renovations of the purification plant and let citizens know how important the water supply is. METAWATER is working on PPP projects with the goal of having public and private partners work together, as well as promoting love and trust by local residents, our customers.

Completion ceremony

Membrane filtration facility tour with citizens

Multiple events, such as a performance by a local JHS brass band

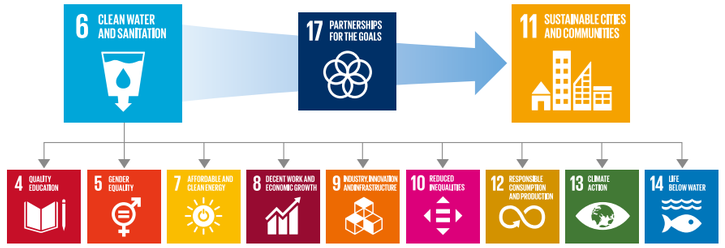
Aiming at sustainable growth of corporate value

Major activities

The METAWATER Group regards itself as having the responsibility to continue to be a fair and honest company as a good corporate citizen, contributing to the sustainable development of society and the global environment. To that end, we are working to solve social issues related to ESG (Environment/Social/Governance) by identifying the important issues from the perspective of SDGs based on the expectations of our shareholders and changes in social and business environments. Reaffirming the importance of the missions of a company whose business is focused on the water and environmental lifelines, we will strive to ensure that we earnestly do what is needed in order to contribute to the sustainable growth of society.

Identifying important issues (materiality) from the perspective of SDGs

We have positioned Goal 6 of the SDGs as our top-priority materiality, while also aiming to achieve Goal 11 through strategic promotion of Goal 17.



Goal 6 of the SDGs is an essential materiality to maintain social activities, and for humans to live safely and with dignity. The METAWATER Group believes that achieving Goal 6 can lead to other issues being solved as well.

METAWATER Group's ESG activities

	Issues to be resolved	Examples of our major activities	
E Environment → P.37	Natural resources	Water-supply area	● Ceramic Membrane Filtration System reduces waste and saves energy
	Climate change	Sewage area	● Water treatment systems reduce river and sea pollution in wet weather ● No. 1 market share for diffuser equipment, with significantly reduced power consumption
	Wastewater and waste substance	Waste recycling facility	● Wastewater sludge fuel system that converts waste into fuel ● Recycling systems that contribute to highly efficient and safe recycling
	Reducing environmental burden	Our offices	● Promoting the reduction of paper use and office power consumption
S Social → P.43	Work-style reforms / development of abilities / diversity	● Promoting work-style reforms, developing abilities to support individual employees, and promoting diversity	
	Health and safety	● Health and safety management so that employees can work happily and enthusiastically	
	Quality	● Ensuring the quality of products and services provided	
	CSR procurement	● Strengthening relationships with partner companies and promoting CSR procurement	
	Social contribution activities	● Community contribution and environmental conservation activities in cooperation with local governments, education and training for the next generation children, international support, disaster recovery, and reconstruction support activities ● Water source forest preservation and environmental conservation efforts	
G Governance → P.53	Corporate Governance	● Assuring management transparency	
	Internal controls	● Forming Compliance Working Group and implementing compliance education	
	Corporate activities	● Improving information security measures	
	Risk management	● Strengthening Business Continuity Management (BCM) activities	
	Compliance		

Topics

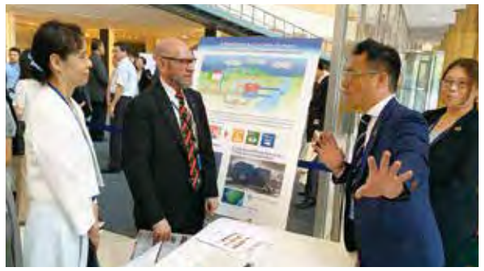
Exhibition held at a reception organized by the Japanese government at the UN headquarters

In July 2019, a reception hosted by the Japanese government was held in conjunction with the "High-level Political Forum on Sustainable Development", a yearly event held at the United Nations headquarters in New York. The "High-level Political Forum on Sustainable Development" aims to promote the UN's SDGs, global Sustainable Development Goals. For this year's event, nearly 200 guests from countries all throughout the world participated. At the reception, small booths related to SDGs were exhibited by local governments and companies, showing their dedication to the promotion of SDGs. METAWATER was one of those companies.

We have introduced various technologies to respond to climate change, including in-vehicle ceramic membrane filtration device, which was developed for areas that do not yet have developed waterworks and can be used as an emergency water purification device in the event of a disaster, and a high-speed CSO filtration system, which improves drainage during periods of heavy rain.

Officials from the government of Papua New Guinea who visited the METAWATER booth said that they were "extremely interested in both technologies for Papua New Guinea" and that they would be contacting the Japanese embassy in Papua New Guinea. Additionally, there were many people from various other countries who got interested in water issues as well.

As a company that supports water and environmental infrastructure, the METAWATER Group is actively participating in these international efforts, while at the same time contributing to the achievement of SDGs and sustainable infrastructure development, focusing on the water supply, sewage, and resource environments.



Giving an explanation of our technology to government officials from Papua New Guinea

Ambassador Hoshino (second from the left), a representative of Japan for the United Nations, and members of METAWATER

We are positively engaged in technological development that contributes to environmental preservation and reducing environmental burdens, while promoting the active use of natural energy sources and the development and introduction of energy-saving and energy-creation technologies.

Contributing to water and environmental infrastructure through business

The environment surrounding water changes daily, and challenges vary by country and region. In recent years, environmental destruction caused by plastic waste has also become a major problem.

Beginning from the era of our founding companies NGK Insulators, Ltd. and Fuji Electric Co., Ltd., the METAWATER Group has been engaged in various technological development for over 50 years as a company supporting water and environmental infrastructure.

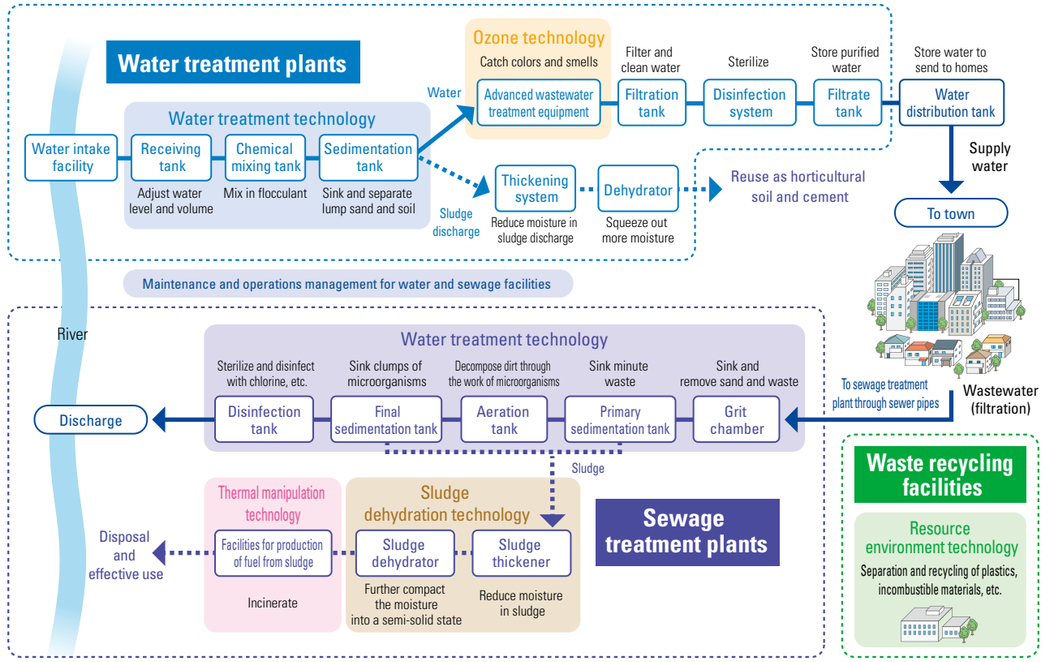
We were established in 2008, adopting the genes of both those companies. Since then, changes in the natural environment have been intensifying and accelerating, including global warming, climate change, and frequent wind and flood damage.

In continuing to make sincere efforts to tackle these issues, according to our research we currently supply equipment to 37% of water treatment plants and 43% of sewage treatment plants domestically.

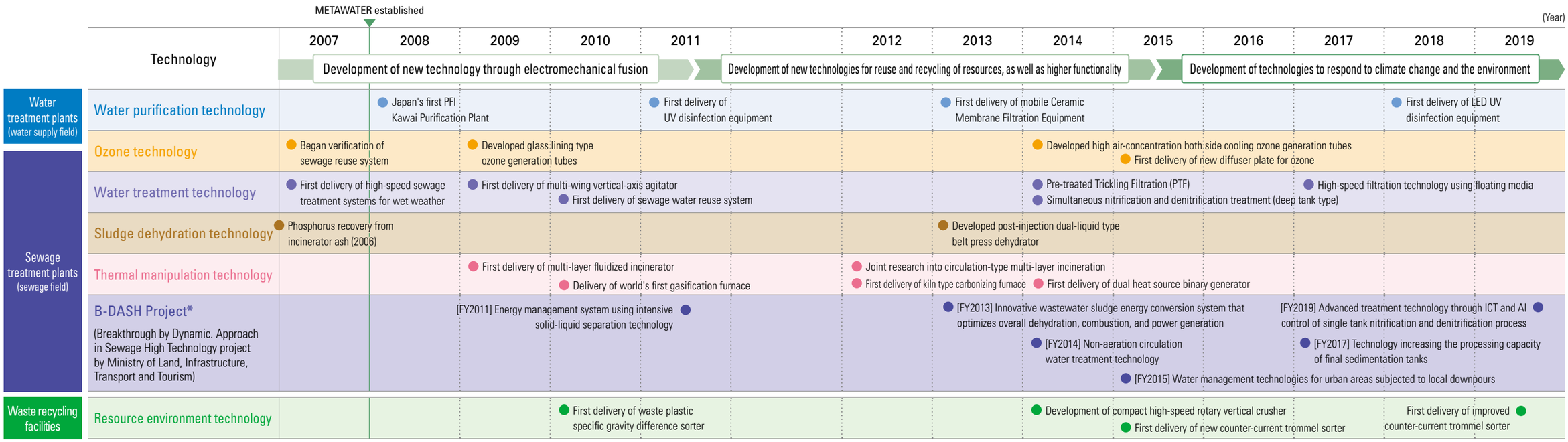
As a company supporting water and environmental infrastructure, the METAWATER Group will continue to focus on the technological development required by the times.

Development facility

Treatment processes and technology for water and sewage treatment plants



Changes in the development of new technology (2007 to present)



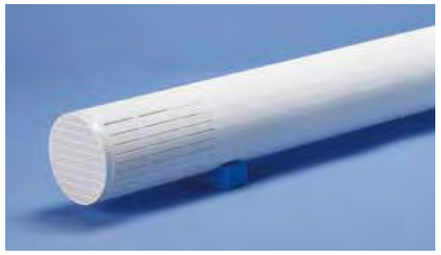
*B-DASH Project Abbreviation of Breakthrough by Dynamic Approach in Sewage High Technology Project. By accelerating research, development and commercialization of new technologies, efficiency of energy use and reduction of life cycle costs in the wastewater business are promoted. It is a demonstration project that has been implemented by MLIT since FY2011 to support overseas development of the water business. Consignees installed a full-scale plant in their sewage treatment plants and demonstrated cost reductions, reductions in greenhouse gas emissions, etc.

Main environmental technology

Water purification technology | Safe water purification system effective even in the face of climate change

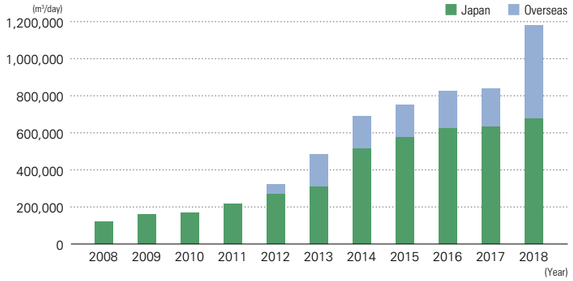
Ceramic Membrane Filtration System

Our Ceramic Membrane Filtration System boasts the No. 1 market share in Japan for water treatment plants utilizing membrane filtration systems. The risk of membrane breakage is extremely low, it can be installed in small spaces, and it can also remove protozoa, allowing for safe filtered water.
Thanks to its exceptionally long life, there is a minimal frequency of membrane replacement. In fact, the first unit of this system was delivered over 20 years ago, and it continues to operate to this day without having had the ceramic membrane replaced yet. Additionally, it is expected to be used as ceramic materials after use, leading to a significant reduction in waste.
Finally, only a low amount of pressure is required to filter raw water, and filtration using differences in water level is possible as well, reducing the power needed by pumps, etc., and saving energy.



Ceramic membrane

<Delivery results> Volume of water processed (cumulative)



A mobile water treatment plant that is also active in times of disaster

Mobile Ceramic Membrane Filtration Equipment

This simplified Ceramic Membrane Filtration System, mounted on a truck, is easy to operate and maintain. Since it is mobile, it can be operated even in areas where there are no skilled engineers. In areas that do not yet have water piping laid, the truck can be moved to various water sources, such as lakes, rivers, and wells, allowing that water to be processed and used as safe drinking water.
Water transferred using piping requires a lot of energy, but since this system can move on its own, it contributes to a reduction in transportation energy.
The system can also be used in the event of a disaster such as an earthquake or heavy rain, thanks to the features of the ceramic membrane that enables stable filtration of even high turbidity raw water.

Mobile Ceramic Membrane Filtration Equipment

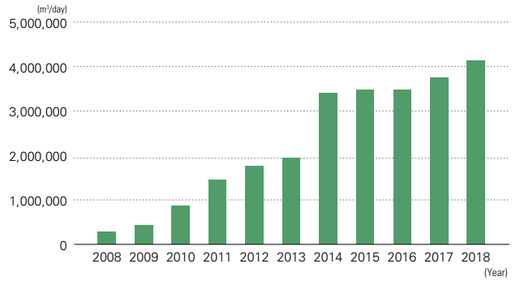
Water treatment technology | Water treatment systems that reduce river and sea pollution in wet weather

High speed CSO filtration system

Combined sewer overflows have a negative impact on water quality and public sanitation at the discharge destination, as simple treated water and untreated sewage are both directly discharged into public water areas, such as rivers, during periods of rainfall. As such, with the 2004 amendment of the Sewerage Act enforcement order, measures to improve combined overflows are being promoted throughout the country. This includes the start of the "combined sewer system urgent improvement project", which has the aims of (1) reducing pollutant loads, (2) ensuring public health and safety, and (3) reducing refuse.
This system filters simply treated water and untreated sewage at high speeds using our uniquely developed special filter medium, which is only about 7.5 mm, filtering out refuse and pollutants such as oil balls and plastics at a rate of up to 1,000 m/day.
Additionally, existing primary sedimentation tanks can be remodeled and set. Since it is easy to operate and maintain, it has been adopted as one measure for improving combined overflow in Japan, contributing to environmental conservation measures regarding public water areas.

Special filter medium

<Delivery results> Design treated water volume (cumulative)

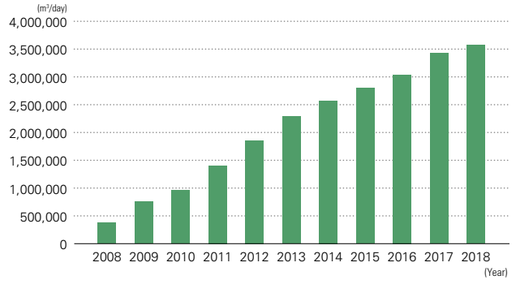


Water treatment technology | System with the No. 1 market share, featuring significantly reduced power consumption

High integration configuration air diffusion system

The sewer system collecting and treating domestic wastewater uses 0.7% of Japan's total electricity consumption (equivalent to the annual electricity consumption of 2.11 million households). Of that, approx. 50% of the electricity is used for sewage treatment in treatment plants. When sewage is being treated, microorganisms decompose pollutants in the sewage, sinking together with the fine impurities which are then removed. However, large amounts of air must be blown (diffused) into the sewage to activate the microorganisms.
METAWATER has developed a system that allows ultra-fine air to be diffused through the use of ceramics technology, enabling high oxygen transfer efficiency. Additionally, by reducing pressure loss when air is blown in, the power consumption required to operate can also be reduced by approx. 30% compared to the conventional system.
The system is maintenance-free and has long-lasting performance, earning it the No. 1 market share in Japan.

<Delivery results> Target water volume (cumulative)



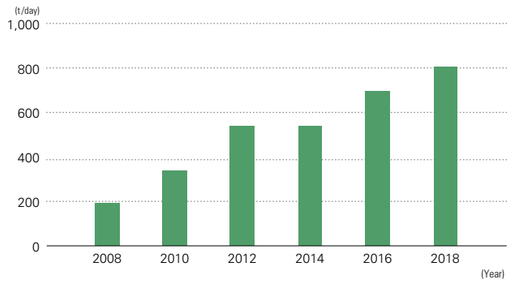
Thermal manipulation technology | Thermal manipulation technology that converts waste into fuel

Wastewater sludge fuel system

As a general rule, sewage sludge in urban areas is dehydrated to reduce the amount of moisture present and then incinerated. The ash generated from the incineration is effectively used as a raw material for cement, etc.
METAWATER's "wastewater sludge fuel system" is a technology that produces fuel (carbon) by steaming and incinerating sewage sludge. The fuel produced is valuable and can be sold, and is effectively used as an alternative fuel source to coal in thermal power plants, etc.
There are high expectations for wastewater sludge fuel to be a new effective use of sewage sludge.

Wastewater sludge fuel

<Delivery results> Treated capacity (cumulative)

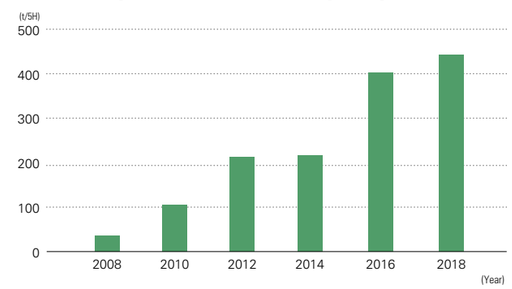


Resource environment technology | Improved plastic sorting efficiency and accuracy

Domestic waste recycling system

The amount of waste plastics generated in Japan is said to be over 9 million tons a year, accounting for approx. 2% of all waste. Waste plastics are subject to import restrictions by countries such as China, and marine pollution, etc., caused by microplastics has attracted attention as a major social and environmental problem. In addition to reducing emissions, the importance of recycling resources is also becoming more important. However, in order to recycle waste plastics, in addition to the manual removal of refuse required, lightweight items such as plastic bags, and heavy items such as detergent bottles, need to be separated.
To improve the recycling rate of plastics, over the past many years the METAWATER Group has been developing equipment that improves sorting efficiency and accuracy in manual sorting work using differences in specific gravity.
Since the risk of explosions or fires caused by contamination of items such as spray cans and lithium batteries is increasing at crushing and sorting facilities, we are also contributing to facility safety through the development of a system that prevents the spread of fires, detecting and extinguishing them quickly in the event of an accident. As of FY2018, approximately 300 of our domestic waste recycling systems have been delivered.

<Delivery results> Treated capacity (cumulative)

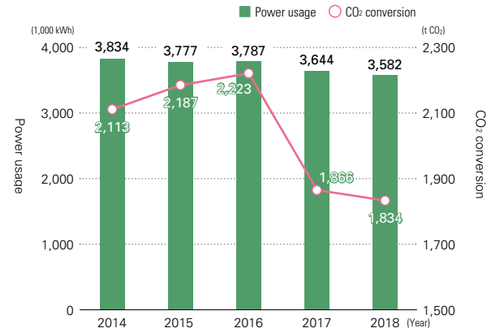


Activities for reducing environmental burdens

Promoting energy-saving measures

The METAWATER Group has set a "goal of a 1% reduction compared to the previous year" with regard to office power consumption and is actively implementing office lighting reduction activities.
Various initiatives are being explored to reduce the amount of electricity used. Lights are turned off during the lunch break, PC monitors are turned off when employees step away from their desk (energy-saving and security measures), and in addition to work-style reforms (introduction of a 4-day workweek, telecommuting, etc.), there are also "Super Refresh Days", where employees are asked to leave at a specific time and all the lights are turned off.
As a result, our electricity usage in FY2018 decreased by 1.7% compared to the previous year, and CO2 emissions were also reduced by 0.9%.

Power usage (office)



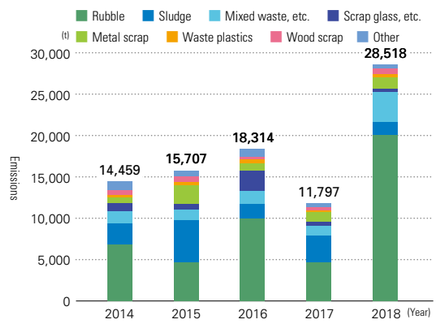
Promoting paperless work environment and purchasing eco-friendly items

The METAWATER Group has abolished the paper-based distribution of meeting materials at executive meetings since FY2013, introducing methods for viewing materials on tablets. This meeting format has already been introduced at other general meetings, as we continue our work to achieve a paperless work environment throughout the company. At the same time, we are also working on purchasing eco-friendly items, and have replaced all internal-use paper with forest-certified paper.

Initiatives regarding industrial waste

The amount of industrial waste generated by business activities (office and domestic construction work) varies depending on the type and amount of construction work each year.
In FY2018, rubble increased significantly due to an increase in water treatment facility improvement work, etc., and emissions were 2.4-times that of the previous year. The amount of metal and wood scrap increased as well. Under such circumstances, we have been continuously implementing departmental education with the aim of promoting proper processing and reuse by strengthening management of industrial waste processing, and in doing so have achieved a rate of nearly 100% for recycling of such waste.

Changes in industrial waste emissions (by type <within Japan>)



Promoting the adoption of electronic manifests

We are continually strengthening our monitoring efforts through improving operation efficiency, visualizing the processing status, selecting service providers that support electronic manifests, and adopting an advance application process for using a paper-based manifest. However, due to factors such as the need to use paper-based manifests in local situations, etc., the adoption rate in FY2018 was only 98.3%, a 1.2% decrease compared to the previous year (the rate nationwide in FY2018 was 58%). Moving forward, we will continue to improve the adoption rate of electronic manifests while taking into account local situations and other similar factors.

Focus

Aiming to become the best company at which to work

Under the management policy that "people are our greatest asset", the METAWATER Group is actively working to achieve a life-work balance while also respecting all aspects of diversity, from human rights to employment.

Executive officer
Deputy Executive General Manager, Corporate Strategy Planning Division
Executive General Manager, HR & General Affairs Planning Office
Responsible for CSR Planning Office
Responsible for Risk Management

Michio Fujii

A "life-work balance"* that allows employees to choose their working style

The METAWATER Group is promoting various work-style reforms, including satellite offices and telecommuting, with the aim of achieving a "life-work balance" that allows employees to choose a style of work that suits their lifestyle.

The relationship between companies and their employees has changed dramatically due to a declining birthrate, aging population, shortage of human resources, development of IT, and a diversification of values regarding lifestyle. It is amongst these changes that we have removed the existing concepts of working styles, such as work hours and locations, creating an environment where employees can choose a working style that suits them in particular. We believe this leads to happier and more highly motivated employees that see the value in their work.

For example, if an employee with a young child can work remotely, choosing a place and time that works for them, we are convinced that it is beneficial for the individual, the family, and the company as well.

Creating an environment where everyone can work enthusiastically

Efforts that enable employees to choose a style of work according to their own individual circumstances and values are also important in promoting diversity.

The METAWATER Group recognizes the individuality of all differences, be it age, gender, personality, disability, nationality, etc., believing that if everyone can work enthusiastically it will lead to company growth.

We believe that being a company with many diverse employees who all work enthusiastically is an important part of attracting others who want to work with us.

Communication is the key to becoming the company people most want to work for

The key to becoming the company people most want to work for is communication. If the use of satellite offices or telecommuting becomes part of the natural work environment, conventional communications methods will also need to change based on the fact that people won't be face-to-face at the same workplace at the same time. As such, we are also focusing on infrastructure development for that purpose. On the other hand, some people have difficulty using the existing system depending on the type of job, work environment, etc. To ensure that everyone can work enthusiastically, we will continue to evolve the existing system through communication with our employees, knowing that we will never stop on a "completed form".

In addition to work-style reforms and promoting diversity, we also try to see things from various other viewpoints, working on enhancing ability development systems to help employees grow, health management to support mental and physical health, safety management so that employees can work with peace of mind, etc.

*We use the term "life-work balance" based on the belief that having a fulfilling life leads to better work performance.

Work-style reforms are the key to corporate competitiveness

The METAWATER Group has entered its third year for work-style reforms, and the environment for realizing various styles of work is steadily taking shape. As a water and environmental infrastructure company, it is our belief that these work-style reforms are indispensable for the sustainable growth of the Group, as quality human resources are the key to corporate competitiveness.

In order to become a company full of active, diverse human resources, we are creating an environment and climate that enables more diverse work, where each employee can find what work-style reforms work best for them. In recognizing these diverse work styles, we are also working to reform awareness of mutual respect.

Three methods for realizing numerous diverse work styles

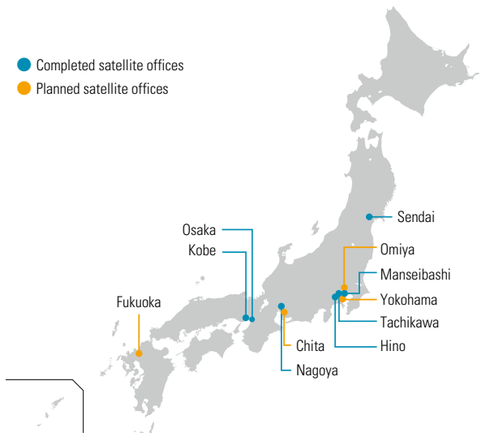
Up to now, we have promoted introducing a telecommute system, establishing satellite offices, and 4-day workweeks.

For the telecommute system, there are no restrictions on usage requirements, working locations, or frequency of use, so that all employees can work from anywhere. We are promoting various initiatives such as "Telecommute Trials" and "Telecommute Weeks" for all employees in order to foster a climate where the system is easy to use. Thanks to these initiatives, many employees are now using the telecommute system.

For satellite offices, the "Mid-Term Management Plan 2020" states that we will establish 10 locations nationwide. We have already established seven of those locations (Sendai, Manseibashi, Tachikawa, Hino, Nagoya, Osaka, and Kobe). By installing PCs in some of the satellite offices, employees can come to these offices without needing to prepare any equipment on their own. Thanks to measures such as this, the number of users is steadily increasing. Moving forward, we will continue to promote the establishment of four more bases and look into the use of shared office services, which will lead to effective use of downtime, reduced commuting times, and more.

Our aim for 4-day workweeks is to create input opportunities outside of work. Using this newfound time, employees each grow as an individual, and the company aims to grow as well by multiplying those individual results. It is a system that makes it easy to secure time outside of work, and can be used for volunteering, self-study, family services, spending time with friends, trips, and more.

Satellite office locations



The highly utilized Tachikawa remote office (65 to 70% occupancy)

Employees' feedbacks

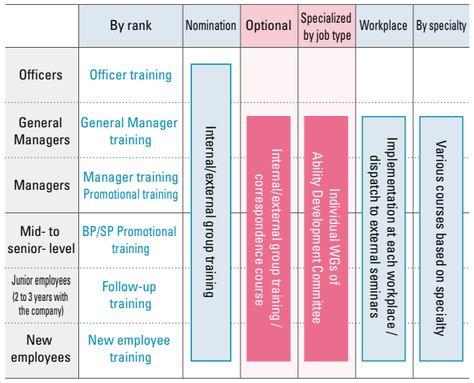
- Periods normally reserved for commutes can instead be used for self-study, etc.
- Since we can work where we want, we can now take advantage of downtime using cafes, etc.
- Productivity has increased as I can change my workspace depending on the details of the work.
- My work schedule has become much more flexible.
- I'm much more aware of time management now.

Initiatives for supporting individual achievement

People are the greatest asset of the METAWATER Group, and so the development of their skills is positioned as one of our most important management themes. This is because they are the greatest source of management resources and corporate value.
In accordance with the HR philosophy of "supporting personnel who desire to develop themselves, providing them with opportunities to develop competency", we are creating a culture of self-learning, building an environment that respects employee individuality and allows them to effectively develop their abilities and potential autonomously.

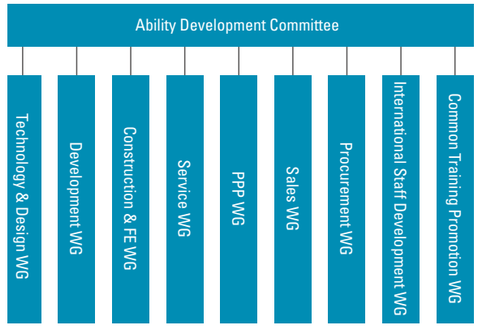
Ability development system diagram

A variety of training programs are held with the aim of identifying roles and developing skills in accordance with employees' growth stages.
In addition to training by rank and nomination, we support the growth of each employee through elective training focused around the idea of autonomous and voluntary learning.



Efforts to enhance education for each occupation

In order to promote the development of abilities for all employees, we have established an Ability Development Committee to formulate priority policies and follow up on various educational situations.
The committee has nine specialized working groups (WGs), each of which plans, develops, and implements specialized education based on the job type. The PDCA cycle for effective education is looped through by providing regular opportunities to exchange opinions between the WGs.



Support for self-development through optional training

This system allows employees to attend training for business skills on a voluntary basis, selecting from over 200 courses, from group training to correspondence courses. This allows them to work in accordance with their own issues. Every year, more than 800 employees, including those from group companies, take advantage of these courses, allowing for interaction between employees in addition to learning.

Brochure for optional training courses

■ Types of elective training

- Elective training
  - Group training
    - External training — Training taken together with participants from outside the company
    - Internal training — Training for Group company employees
  - Correspondence — Choosing courses to attend based on individual desires

Participant feedbacks

I learned a number of things from optional training, and it lets me think objectively about work issues, which leads to good awareness. There are various themes, so each year I'm trying to take courses based around a different self-development theme.

To be a company where everyone can work enthusiastically

We promote diversity based on the belief that the abilities of various employees with diverse personalities will lead to the growth of the Group. In addition to expanding the system to accommodate a variety of human resources, we are implementing measures such as creating rewarding environments where employees can improve their careers.

Aiming to be a company where various human resources can play an active role in operations

Since METAWATER was established, we have introduced an impartial personnel system that is not bound by personal factors such as nationality, and we regularly recruit foreign employees and accept employees from overseas sites (national staff).
In order to develop personnel who can lead the growth of overseas business, we are working to strengthen the language skills of young employees and promote cross-cultural understanding through OJT with ODA projects, as well as collaborations with overseas subsidiaries and partner companies. We will continue promoting the next generation personnel to expand our overseas business.


Cultural understanding with overseas OJT

Round-table discussion on the theme of "childcare and career" for both male and female employees

A round-table discussion was held centered around male and female employees with childcare experience, allowing them to talk about both work and personal matters. In recent years, the number of male employees who have taken childcare leave has increased, and male participants have inquired about how they can balance childcare and work.
In addition, exchanging opinions from the viewpoints of both men and women deepened mutual understanding, leading to more meaningful discussions in working toward a workplace where everyone is more comfortable.


"Childcare and career" round-table discussion

Becoming a company where employees with disabilities can play an active role


Daily morning meeting


Converting internal documents to PDFs

Another initiative for promoting diversity is to create an environment where people with disabilities can play an active role in the company. Employees with disabilities are engaged in a wide range of activities, taking up responsibility for various tasks in numerous departments. Every morning, instructors (vocational life instructors for persons with disabilities) check the health of each member at the morning meeting and during exercise periods, deciding upon their work assignments for the day by taking their condition into consideration.
The recent work converting internal documents to PDFs has contributed to the promotion of telecommuting, one of our work-style reforms. Positive feedback results in expanded requests for work and more opportunities for active participation in the company.

Common internal work

Creating business cards for employees; sorting, collecting, and distributing internal mail; preparing meeting and training rooms; lending out projectors and other equipment; managing and sending out company-wide catalogs; etc.

Department work

Converting internal documents to PDFs; organizing and filing expense slips; aggregating and digitizing handwritten questionnaires; creating various materials; sending out purchase orders; etc.

Initiatives for promoting better health

We believe that people are our greatest asset, and as such the METAWATER Group has established various support systems for the mental and physical health of employees and their families. It is our belief that promoting the good health of each employee leads to improvements in corporate vitality, and so we will continue promoting health management.

Health management system

The METAWATER Group has established health management centers at our head office, as well as in Nagoya, Osaka, and other offices. This allows professional physicians, psychological counselors, and dedicated health management staff to follow up with employees promptly and whenever it is needed. We conduct individual interviews and give health-related guidance throughout the year so that employees themselves can maintain and improve their health.

Improving health awareness

Due to declining birthrates, an aging population, and a shortage of labor, it is becoming more common throughout the world to work until the age of 65 or 70. As such, proper health management from an early age is becoming more important than ever. METAWATER carries out "health-care activities" and gives "health advice" with the aim of ensuring that employees can continue to work healthily and enthusiastically. "Health-care activities" include various events tailored to employees' occupation, age, physical condition, etc., such as exercise or meal seminars that can be incorporated into everyday life and health education for specific age groups. In FY2018, approximately 700 people participated in these activities. Additionally, health management staff travel around the country, talking one-on-one with employees and giving health advice.

Giving health advice through personal interviews

Mental health care

In order to prevent mental health issues from arising, we have e-learning classes such as "line care education" for employees at management positions and "self-care education" for all employees. In addition, a "Mental Health Handbook" is distributed to all employees to encourage a correct understanding of mental health.
The work-style reforms promoted by the METAWATER Group are being promoted in conjunction with various mental health care initiatives with the aim of reducing commuting stress and improving "life-work balance".

Safety and hygiene initiatives

Based on the basic policy for health and safety management, the METAWATER Group is working to create a work environment where employees can work safely without worry of work-related disasters, illnesses, or traffic accidents.

Basic policy for health and safety management	Management has adopted a firm position under the philosophy that "No one will get injured or injure others". Through this, all METAWATER employees and subcontractors work together to comply with relevant laws and regulations and prevent occupational and traffic accidents, creating a work environment where people can work healthily and comfortably.

Mandatory guideline education and the establishment of local safety and health rules

The METAWATER Group has established its own "Local occupational safety and health guidelines" that can be used as a guide for health and safety rules for local construction and work. The Group's health and safety rules are based on the Safety and Health Act, and are compiled into a single volume that is revised annually in response to legal revisions, etc.
Every year, guideline education is held for employees, explaining the content of the manual and giving case studies. By making this education mandatory for all employees involved in field work, we are continuously working to instill and share health and safety rules.

Booklet

Guideline education explaining health and safety rules

Expanding health and safety education

The METAWATER Group insources health and safety education for the rules and regulations required for work.
The courses listed to the right are always available so that not only new hires fresh out of university, but also mid-career hires that are expected to go straight to work, can get the training they need in a timely manner. We are continuing to improve the content of these courses and train instructors.

- Foreman / health and safety manager training
- General health and safety manager training
- Special education related to hazardous work: hypoxia and hydrogen sulfide poisoning
- Special education for dioxin exposure prevention work
- Special education for handling high voltage or special high voltage electricity
- Special education for handling low voltage electricity
- Special education for work using full harness safety belts
- Health and safety education at the time of employment
- Preliminary education before being dispatched
- Heat stroke prevention education for operations managers

Additional company driving license requirements and safe operation of business vehicles

The METAWATER Group has established an internal driving license system for vehicles used for business, allowing us to issue and check driving histories, appropriateness, etc., for each employee. Since FY2018, yearly driver training classes have been added as a requirement for an employee to renew their company driving license.
Drivers from various work sites also participate in monthly KY* training activities, looking back on their own driving performance using self-diagnosis sheets. Additionally, we are systematically working to ensure safe daily operation by having managers decide on if vehicles should be used depending on the weather, providing support through the introduction of safety devices such as driver recorders and automatic brakes, etc.

Driver training for renewing company driving licenses

*KY activities: KY stands for Kiken (danger) and Yochi (prediction)

Quality initiatives

The METAWATER Group has a basic quality policy, which is to ensure that all of its products and services meet optimal quality standards to satisfy its customers, always aiming to leave customers further fulfilled.
In order to maintain quality, preventing accidents is essential.
Plant risk assessment education is one of the activities that the Group carries out to achieve this.

Goals

- Zero serious accidents
- Continual quality improvement

Preventing equipment accidents through plant risk assessment education

In order to prevent serious accidents and failures, the METAWATER Group conducts a PRA (Plant Risk Assessment) for each operation process, striving for continuous improvement.

Operation processes for plant construction

PRA case study education was held for the service department to prevent worst case scenarios from coming to pass. The theme of this training was education on water distribution and chemical injection facilities, issues with which could have significant impacts on the lives of ordinary citizens. Employees from all relevant departments were subject to attend.
This course targeted a broad audience ranging from junior to veteran staff. Teams held discussions with members from different locations that they normally do not have a chance to speak with. In addition to gaining an understanding of the necessity of preventing equipment accidents and discovering that risks and countermeasures are perceived differently by various groups, it is also an opportunity for attendees to take notice of what skills and knowledge they are lacking through group discussions. As a result, equipment accidents in target departments have been reduced.
Nevertheless, we plan to provide education on the importance of plant monitoring to lead to early detection, preventing important points that could lead to an equipment accident from being overlooked.


PRA education course

Feedbacks from the Departments having implemented PRA Education

This PRA case study course was carried out for each of the four sections in the service department (for electrical equipment), so we were able to learn about the different attitudes and opinions of the other groups regarding the prevention of equipment accidents. Group discussions were held between junior employees and with other group members to create new awareness for everyone participating, resulting in improved awareness and skills for employees in all four sections.
Since last year, the service department has been carrying out their daily operations with their highest priority goal being the elimination of occupational accidents, equipment accidents, and automobile accidents. By continuing to work with the Quality Assurance Office, we hope that the products and services we provide will continue to satisfy customers and fulfill their needs.

CSR procurement

The METAWATER Group promotes procurement operations based on three basic policies: promoting transparent procurement, strengthening partner relationships with suppliers, and promoting CSR procurement.

Promotion of transparent procurement – 98 new suppliers

The "Inquiries about purchasing and dealings" form is posted on our corporate website, and we provide fair and equitable entry opportunities to all business partners. We launch new transactions with around 100 companies every year. The number of new corporate business partners in FY2018 was 98.


Business negotiations

Enhancing paperless operations through EDI*

The METAWATER Group promotes the implementation of EDI. In addition to improving the accuracy and efficiency of procurement operations, we are promoting implementation of EDI with the understanding and cooperation of business partners to work on becoming paperless, reducing our impact on the environment. Introduction of EDI began with development-related and in-house equipment orders, and as of FY2018 approximately 50% of orders were through EDI.
This made the paper used traditionally in order forms, invoices, etc., unnecessary, leading to a reduction of approximately 30,000 sheets. Like us, our suppliers have also eliminated invoices and envelopes, leading to a paperless environment.
We will continue expanding the scope of transactions and applications for EDI, aiming to further improve operating efficiency and reduce our environmental burden.

*EDI: Electronic Data Interchange, a framework supporting electronic business transactions

Promotion of green procurement

The METAWATER Group is promoting the procurement of eco-friendly office supplies (products with socially recognized eco-friendly marks such as the Eco Mark and Green Mark).
Efforts were strengthened for 12 frequently used items in particular, including copy paper, business cards, and highlighters, which were designated as green procurement promotion items. In FY2018, the green procurement rate for these items reached approximately 94%. We will continue efforts to improve the green procurement rate throughout the entire company.

Legal compliance

We actively promote participation in social insurance for construction work, etc. Enrollment in social insurance, etc., is thoroughly enforced by ensuring notifications are sent to suppliers, providing instructions for clarifying statutory welfare expenses in estimates, exchanging opinions with individual visits, and more.

Thorough enforcement of internal education

We hold study sessions on the "Act against Delay in Payment of Subcontract Proceeds, Etc. to Subcontractors" for all employees in charge of purchasing, ensuring thorough compliance and promoting understanding.
We also offer e-learning courses for other employees to strengthen compliance throughout the company.

Topics

First partners meeting held

Suppliers are important partners for the METAWATER Group to develop our business and provide customers with products and services that have consistent quality and delivery times. We build relationships of trust through daily dialogs with our suppliers. In 2018, the 10th anniversary since establishing the Group, we expressed our gratitude and invited suppliers to a partners meeting that we hosted. Approximately 600 people joined the meeting, and we were able to accomplish deep and meaningful exchange. We will continue to build better relationships now and into the future.


10th anniversary partners meeting

Social contribution

METAWATER's policy on social contribution activities

The METAWATER Group's social contribution activities contribute to the realization of a sustainable society by solving social issues through water and the environment.

METAWATER's guidelines on social contribution activities

- We will improve water-related environmental improvement activities and water and environmental awareness activities.
- We will value cooperation and collaborations with various stakeholders.
- We will foster awareness for voluntary employee participation.

The METAWATER Group handles "water", a natural resource indispensable for life. As a water and environmental infrastructure company, protecting the water cycle is our mission. We are promoting social contribution activities so that people from all walks of life can gain an understanding of the importance of water and the environment.
We act with the aim of contributing to society and the global environment through both business and social contribution activities through the lens of water and the environment.

Education/Public education

The METAWATER Group provides classes on the water cycle and environment preservation at schools and event locations, teaching through the technology and skills we've acquired through our main business, water and the environment.

"METAWATER On-site Lessons for Children"

On-site lessons regarding the water cycle are provided to children, as they will be leading the next generation.
In FY2018, we visited 357 children at five schools, providing lectures and filtration experiments showing the importance of water and how it is used.


Lesson given at Miura City Misaki Elementary School in Kanagawa Prefecture

On-site, hands-on lessons at the Shirakami-sanchi World Heritage Conservation Center

We held hands-on lessons for elementary students at Shirakami-sanchi, a world heritage site. They were collectively titled the "Shirakami Water Adventure", and consisted of an adventure in the local forest, sand filtration experiments using plastic bottles, etc.


Lesson given at the Shirakami-sanchi World Heritage Conservation Center

Environment preservation

The METAWATER Group promotes Satoyama Conservation Activities, which aim to conserve forests and biodiversity in order to nurture and protect water forests.

Forest conservation activities

We hold forest conservation activities at four locations across Japan, primarily in Okutama, Tokyo. At the "METAWATER Okutama Forest", we hold water forest conservation activities jointly with the NPO Green Earth Center, planting trees and clearing undergrowth every year.


Okutama forest

Contribution to local community

At the METAWATER Group, we think it is important to interact with the local community, and as such we are engaged in various local contribution activities, such as uchimizu (water sprinkling), cleaning up towns and rivers.

Cleanup activities at each of our business locations

The Group holds cleanup and beautification activities around each of our offices, monthly and several times throughout the year. In FY2018, we carried out these activities at 44 locations nationwide.

FY2018 cleanup areas

Okinawa cleanup activities

METAWATER Uchimizu Daisakusen

Every year in front of our head office, METAWATER holds an uchimizu (water sprinkling) event using sewage water reclaimed from the Shibaura Water Reclamation Center in Tokyo, which has adopted our technology.
This annual event allows visitors to experience the coolness water sprinkling can provide together with local communities, associations, sponsor companies, nursery school toddlers, and others just passing by.


Uchimizu Daisakusen event held in front of the head office

International support/relationships

As part of creating a community where multiple cultures coexist, the METAWATER Group promotes international support and exchange activities that take care of local needs.


Phnom Penh sewer adoption and enlightenment activities

Support for disaster recovery and restoration

The Group conducts its own disaster relief activities and reconstruction support events.

Donations for the heavy rains in west Japan and the Hokkaido Eastern Iburi earthquake

In July of 2018 we donated to help support relief efforts for the landslides caused by heavy rain in west Japan that same month, as well as for the Hokkaido Eastern Iburi earthquake that occurred on September 6, 2018.


Donations for the Hokkaido Eastern Iburi earthquake

Onagawa-cho reconstruction support project

We took part in both the "Onagawa-cho Fukkosai Festival" and the "Onagawa Saury Harvest Festival" in Miyagi Prefecture.
To support the special products of Onagawa-cho, every year we hold an internal sales event throughout the company to show our support.

Onagawa-cho Fukkosai Festival

The METAWATER Group is strengthening the entire group's risk management structure including information security. In addition, we are committed to promoting Business Continuation Management (BCM) as an entire group to continue business operations even in the event of various unforeseen situations.

Corporate governance

Basic concept of corporate governance

So that we can grow sustainably with society, we are committed to improving our internal control based on our corporate mission. We are aiming to be a group trusted by society through our continuous contribution to it while meeting the expectations of our stakeholders including customers, local communities, shareholders and investors. To realize this aim, we are engaged in improving the following aspects of corporate governance.

1. The Board of Directors and the Board of Auditors are arranged and independent directors are designated to reinforce the organization for supervising our business with the purpose of creating corporate management with excellent reliability and transparency.
2. Promotion of compliance and reinforcement of internal control functions are realized to establish an organization that can sustainably enhance corporate value.
3. We disclose information in a fair, objective and appropriate manner and at an appropriate timing. Further, we communicate proactively with our stakeholders.

As a basic policy of the METAWATER Group based on the rules of the "Corporate Governance Code" (hereinafter "CG Code") stipulated by the Tokyo Stock Exchange on June 1, 2015, the Group established the "Basic Policy on Corporate Governance" (hereinafter "CG Basic Policy") on November 27, 2016 (updated November 29, 2018), and disclosed the policy on the corporate website.
https://www.metawater.co.jp/csr/responsibility/pdf/governance.pdf

Approaches to improve corporate governance

1 Framework of directors

- The majority of the Board of Directors members are outside directors now (5 out of 9 directors are outside directors)

We have five outside directors of nine directors to ensure management transparency and soundness.

- One-third of the Board of Directors are independent directors (outside directors) (3 out of 9 directors are independent directors)

The METAWATER Group stipulates criteria for the independence of outside directors in the Basic Policy on Corporate Governance. The number of outside directors satisfying the criteria is three, and these directors were designated as independent directors together with two outside auditors in the report to the Tokyo Stock Exchange.

46th ordinary general meeting of shareholders

2 Response to Corporate Governance Code

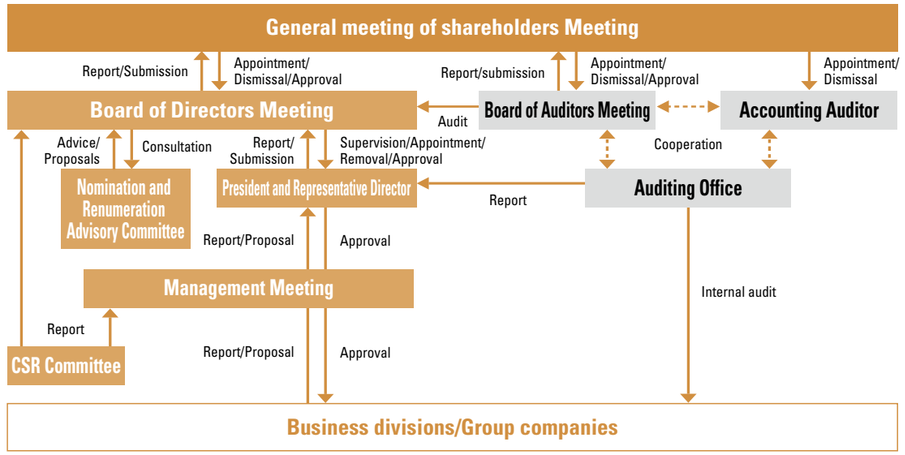
METAWATER was listed on the First Section of the Tokyo Stock Exchange Market in December 2014. As the CG Code was established in June 1, 2015, the group implemented the measures stated on the right. We are committed to moving forward with corporate governance also in future.

*Only (Supplementary Rule 4-2-1) is the Explain Item in the "Report on Corporate Governance" (hereafter "CG report") submitted on June 26, 2018. The reason for non-implementation (Supplementary Rule 4-2-1) (from CG Report) The current remuneration for standing directors is comprised of fixed remuneration based on their post and a bonus linked with the company's performance in the applicable business year. We will continue reviewing the percentage of remuneration linked with mid-term or long-term performance and the appropriate setting of percentage for cash and the company's own stock as remuneration.

November 2015	• Established "Basic Policy on Corporate Governance"
June 2016	• Added one independent director (outside director) *in compliance with CG Code (Rule 4-8) • Disclosed evaluation on effectiveness of the Board of Directors *in compliance with CG Code (Rule 4-11-3)
June 2017	• One independent director (outside director) was added • Held a meeting by independent outside director *in compliance with CG Code (Supplementary Rules 4-8-1 and 4-8-2)
November 2018	• Revised the CG Basic Policy in accordance with partially revised securities and listing regulations
November 2018	• Established Nomination and Renumeration Advisory Committee

Corporate governance organization

METAWATER Group opts for an arrangement of a Board of Auditors as an organization design based on the Companies Act. The Board of Directors makes important decisions related to management and supervises business execution. At the same time, auditors and the Board of Auditors independent from the Board of Directors audit the status of directors' execution of their duties and the like. For the purpose of strengthening independence, objectivity, and accountability for the function of the Board of Directors related to the nomination of candidates for directors and auditors, determining renumeration for executive officers and directors, etc., a Nomination and Renumeration Advisory Committee has been established under the Board of Directors. Furthermore, METAWATER Group has introduced the Executive Officers System to accelerate management-related decision-making, reinforce functions to monitor business execution, and clarify responsibility. Additionally, a CSR Committee has been arranged as an organization to determine the important activities, systems, organizations, and the like of the Group to ensure compliance with regulatory requirements and corporate ethics. The position and role of each function are mentioned below.



Board of Directors Meeting

The Board of Directors meetings, held on a monthly basis and also as needed, function to supervise management and decision-making. The Board of Directors is comprised of nine members including five outside directors. The status of business execution by directors, including the representative director, is monitored by auditors, where, as a basic rule, three auditors attend the Board of Directors meeting and express their opinions whenever necessary.

Board of Auditors Meeting

The Board of Auditors meetings are held on a monthly basis and function to monitor management. The Board of Auditors is comprised of three members including two outside auditors. Auditors are selected from those with expertise and experience regarding our business as well as in legal and financial affairs. The Board of Auditors determines the audit policies and scope of work for each auditor, as well as specific action plans and schedules, and monitors the status of business execution by directors.

Nomination and Renumeration Advisory Committee Meeting

The Nomination and Renumeration Advisory Committee was established under the Board of Directors as a voluntary advisory body that functions as both a nomination committee and renumeration committee. These meetings are held as necessary, deliberating on matters related to the appointment and dismissal of directors, auditors, and executive officers, as well as renumeration for directors, executive officers, etc., in consultation with the Board of Directors, and also providing advice and proposals to the Board of Directors. The committee is comprised of six members total, including the Director and President, three independent outside directors, and two independent outside auditors, with an independent outside director selected as the chairperson.

Executive Officers System

The Executive Officers System has been introduced to accelerate management-related decision-making, reinforce functions to monitor business execution, and clarify responsibility. The executive officers are comprised of fifteen members including four directors and executive officers. Their term of office is one year and their appointment, reappointment, and dismissal are determined at Board of Directors meetings.

Management Meeting

The Management meetings consist of fifteen executive officers and, as a general rule, are held twice a month. In these meetings, reports are given and discussions are held regarding important management-related matters stipulated in our official competence rules. Standing auditors attend the meeting and express opinions as necessary, monitoring the status of business execution by the President & Chief Executive Officer as well as those executive officers below him.

CSR Committee Meeting

CSR Committee meetings are held twice a year, with a function of promoting compliance and reinforcing internal control. The CSR Committee has seven subordinate working groups under it. The committee is comprised of fifteen members, including the chairperson and fourteen committee members. Details of the CSR Committee's activities are reported to the Management Meeting and Board of Directors Meeting as needed.

Corporate governance

Outside Director's roles

1 Provide advice to promote the Company's sustainable growth and improve medium- and long-term corporate value based on own knowledge and insights, and supervise the execution of business by the Company
2 As a position that is independent from the management, receive opinions from stakeholders including minority shareholders, and appropriately reflect those opinions at Board of Directors Meetings
3 Appropriately manage risks including conflicts of interest arising from the execution of business by leveraging internal and external knowledge and insights, as well as experience

Reasons for selection by individual

	Corporate title	Reasons for selection
Susumu Sakabe	Outside Director	Mr. Sakabe held important positions at NGK INSULATORS, LTD. and has a wealth of management experience as well as a depth of expertise in the areas of finance and accounting. Considering that he has the required skill set to supervise the execution of the business of the Company by leveraging his management experience and expertise, we appointed him as an Outside Director of the Company.
Motofumi Matsumura	Outside Director	Mr. Matsumura held important positions at Fuji Electric Co., Ltd. and has a wealth of management experience as well as a depth of knowledge in a broad range of business areas. Considering that he has the required skill set to supervise the execution of the business of the Company by leveraging his management experience and expertise, we appointed him as an Outside Director of the Company.
Keiichiro Sue	Outside Director Independent Director	Mr. Sue is a lawyer and is well versed in international legal affairs including international commercial relations. He also held the position as an outside director of another company and has balanced and broad perspectives of industries related to the Company. Although he has no direct management experience in a company except as an outside director, we consider him to have the required skill set to supervise the execution of the business of the Company by leveraging his experience and expertise, and accordingly appointed him as an Outside Director of the Company. Because he meets the standards set by the Company for Criteria for Independency of Outside Directors and also fulfills the requirements of an Independent Director stipulated by the Tokyo Stock Exchange, we consider him to have no potential conflicts of interest with general shareholders, and have designated him as an Independent Director.
Kaoru Aizawa	Outside Director Independent Director	Mr. Aizawa held important positions, including Representative Director of Nitto Denko Corporation. He also has a wealth of management experience gained through his position as an outside director of another company and possesses balanced and broad perspectives of industries related to the Company. We consider that he has the required skill set to supervise the execution of the business of the Company by leveraging his experience and extensive knowledge. Accordingly, we appointed him as an Outside Director of the Company. Because he meets the standards set by the Company for Criteria for Independency of Outside Directors and also fulfills the requirements of an Independent Director stipulated by the Tokyo Stock Exchange, we consider him to have no potential conflicts of interest with general shareholders, and have designated him as an Independent Director.
Fumiko Kosao	Outside Director Independent Director	Ms. Kosao is well versed in corporate accounting with expertise in the area of taxation and has broad perspectives gained through her position as an outside director of another company. Although she has no direct management experience in a company, except as an outside director, we consider that she has the required skill set to supervise the execution of the business of the Company by leveraging her experience and expertise. Accordingly, we appointed her as an Outside Director of the Company. Because she meets the standards set by the Company for Criteria for Independency of Outside Directors and fulfills the requirements of an Independent Director stipulated by the Tokyo Stock Exchange, we consider that she does not have potential conflicts of interest with general shareholders, and have designated her as an Independent Director.
Kimihiko Uemura	Outside Auditor Independent Director	Mr. Uemura is a lawyer and is well versed in corporate legal affairs including the Companies Act. With a wealth of experience gained through his position as an outside director of another corporation, he has balanced and broad perspectives of industries related to the Company. We consider him to have the required skill set to supervise the execution of the business of the Company by leveraging his experience and high level of independence, and accordingly appointed him as an Outside Auditor of the Company. Because he meets the standards set by the Company for Criteria for Independency of Outside Directors and also fulfills the requirements of an Independent Director stipulated by the Tokyo Stock Exchange, we consider him to have no potential conflicts of interest with general shareholders, and have designated him as an Independent Director.
Kazuo Takimoto	Outside Auditor Independent Director	Mr. Takimoto is well versed in corporate taxation as a certified public accountant and tax accountant. With a wealth of experience gained through his position as an outside director of another company, he has balanced and broad perspectives of industries related to the Company. We consider him to have the required skill set to supervise the execution of the business of the Company by leveraging his extensive experience of finance and accounting, as well as high level of independence, and accordingly appointed him as an Outside Auditor of the Company. Because he meets the standards set by the Company for Criteria for Independency of Outside Directors and also fulfills the requirements of an Independent Director stipulated by the Tokyo Stock Exchange, we consider him to have no potential conflicts of interest with general shareholders, and have designated him as an Independent Director.

Interview with Outside Director

The METAWATER Group will drastically change to achieve its long-term vision.
In order to change and respond to these changes, I try to give advice and opinions from the perspective of an Outside Director.

Outside Director Kaoru Aizawa

—— It has been three years since you were appointed as an Outside Director. What are your overall impressions regarding the management of the Board of Directors, state of discussions, etc.?

Lively opinions are always being given, and the board operates in a good atmosphere. Moreover, I think it is wonderful that the board members are diverse and that they exchange opinions as experts of their various fields. With this last year in particular, our 10th anniversary, I feel like the company is changing dramatically. It's great that lively opinions are exchanged while also being aware of where to change, what to change, and what not to change.

—— Please tell us about your role as an Outside Director.

I was previously involved in training and education for management personnel of the METAWATER Group. It was during this time that I started to experience the culture and warmth of the people of the METAWATER Group, which led me to take on the role of an Outside Director. In this role, I hope that I can use my experience and knowledge to help expand the Company. However, it is important to watch over the Company as well. Being part of the same culture, you may miss, overlook, or simply not care about certain things. An important role of Outside Directors is to give advice to be aware of these points from a third-party perspective.

—— What are your thoughts on the governance of the METAWATER Group?

I think that the governance system and strengthening of that system are being addressed sincerely and thoroughly as a whole. However, when you think that something is good enough, that is when many things start to break down and deteriorate. Therefore, I will try to move forward while asking myself, "Is this really good?" endeavoring to give advice to increase the transparency and objectivity of governance.

—— What is necessary for sustainable improvement of corporate value?

I think the METAWATER Group has a unique feature that is not shared by other companies: a fusion of electrical-, machinery-, ICT-, and maintenance-based know-how. Another important strength is how they maintain high quality in each field. However, as things continue to shift from the public to the private sector, and also taking into consideration the importance of water demand overseas, the value of not just hardware such as equipment, but services using networks, etc., should increase. I believe that people hold the key to the quality of a company, and so I would like to see ongoing development of human resources who can play an active part in the world being promoted by the METAWATER Group.

—— What are your expectations with regard to social issues (SDGs, etc.)?

It is important to address social issues such as the SDGs. I recognize that the METAWATER Group exists to solve a major one of those issues, water and resources. All over the world, there are millions of people who become sick or die because they don't have access to clean water. I hope the METAWATER Group can make full use of the power they have available so that safety and security can be spread far and wide.

—— What are your future aspirations as an Outside Director?

I want to give opinions and advice from a different perspective than those inside the Company so that each and every employee of the METAWATER Group can work comfortably and continue to contribute to sustainable corporate development and society. I would like to participate from a standpoint outside of the Company with a grasp of the overall picture.

Management organization

(As of end of June 2019)

Directors

1 President and Representative Director
Yasushi Nakamura

2 Director
Akira Kato

3 Director
Noboru Okuda

4 Director
Kenji Yamaguchi

5 Outside Director
Susumu Sakabe
Director of NGK INSULATORS, LTD. Senior Executive Officer

6 Outside Director
Motofumi Matsumura
Advisor of Fuji Electric Co., Ltd.
Director of Fuji Furukawa Engineering & Construction Co., Ltd.

7 Outside Director
Keiichiro Sue
Partner of Blakemore & Mitsuki Law Firm
Outside Audit & Supervisory Member of NHK Spring Co., Ltd.

8 Outside Director
Kaoru Aizawa
Independent Director of Nicca Chemical Co, Ltd.

9 Outside Director
Fumiko Kosao
Licensed tax accountant, Kosao Fumiko Accountant Office
Outside Auditor of Tobishima Corporation
Outside Director of CTI Engineering Co., Ltd.

Auditors

10 Audit and Supervisory Board Member
Shigeru Hatsumata

11 Outside Auditor
Kimihiko Uemura
Partner of Midosuji Legal Profession Corporation

12 Outside Auditor
Kazuo Takimoto
CPA and Tax Accountant of
Tokyo Kudan Accounting Office

Executive Officers

President & Chief Executive Officer
Yasushi Nakamura
Operation execution control

Vice President and Executive Officer
Akira Kato
Assistance to the Chief Executive Officer
Executive General Manager, Corporate Strategy Planning Division
Responsible for Corporate Administration Department, Affiliates' Coordination Department, and Legal Department, Corporate Strategy Planning Division
Executive General Manager, Export Control Office and Affiliates' Coordination Department, Corporate Strategy Planning Division
Executive General Manager, Export Control Office

Senior Executive Officer
Noboru Okuda
Executive General Manager, Plant Engineering Division
Responsible for Product Center
Responsible for Quality Assurance Office

Senior Executive Officer
Makoto Shimizu
Executive General Manager, Service Solution Division
President and Representative Director, METAWATER TECH Co., Ltd.

Executive Officer
Masashi Sakai
Executive General Manager, Public Private Partnership Division

Executive Officer
Eiji Nakamura
President and Representative Director, METAWATER SERVICE Co., Ltd.

Executive Officer
Kenji Yamaguchi
Executive General Manager, Business Strategy Division
Responsible for WBC Center

Executive Officer
Michio Fujii
Deputy Executive General Manager, Corporate Strategy Planning Division
Executive General Manager, HR & General Affairs Planning Office, Corporate Strategy Planning Division
Responsible for CSR Promotion Office, Corporate Strategy Planning Division
Responsible for Risk Management

Executive Officer
Masahiro Takagi
Executive General Manager, Sales and Marketing Division

Executive Officer
Masayuki Nakagawa
Executive General Manager, Financial Planning Office, Corporate Strategy Planning Division
Responsible for Information Technology Planning Department, Corporate Strategy Planning Division

Executive Officer
Yoshito Ezure
Deputy Executive General Manager, International Business Division
Director and Deputy President, METAWATER USA, INC.
Chairman of the Board, Aqua-Aerobic Systems, Inc.

Executive Officer
Tsugio Kusano
Executive General Manager, Plant Construction Center

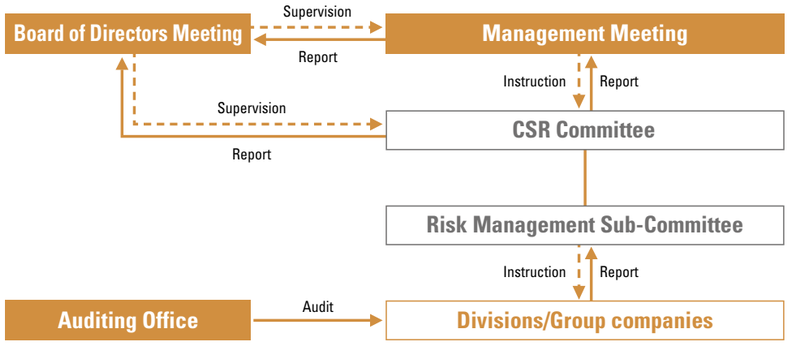
Executive Officer
Susumu Kadowaki
Deputy Executive General Manager, Sales & Marketing Division

Executive Officer
Koichi Yamaguchi
Executive General Manager, Procurement Center
Responsible for Safety and Health Management Office

Executive Officer
Ken Akikawa
Executive General Manager, International Business Division
Director and President, METAWATER USA, INC.

Risk Management

With the "METAWATER Group Risk Management Rules" in place, the METAWATER Group has a systematic awareness of various risks that can affect the Group's operations, evaluates and manages those risks appropriately, and thereby seeks to prevent their occurrence or to reduce losses associated with them, while striving to improve and expand the corporate value of the Group.
Furthermore, the Risk Management Working Group has been established within the CSR Committee in an effort to improve and reinforce the corporate framework so that the Group can appropriately address individual risks in order to meet stakeholders' expectations.



Besides, to further address individual risks, we have stipulated "Group Emergency Procedures," "Compliance Rules," "Information Security Policies," rules and standards to address accidents and environment/safety and hygiene issues, manuals, and so forth. As a result, we have established a system that enables prompt and appropriate responses to be taken in the event of various contingencies.

BCM activities

With a commitment to strengthening Business Continuation Management (BCM), the METAWATER Group has developed the Business Continuation Plan (BCP), which is suitable for its business characteristics.
Furthermore, the Group regularly holds BCM Promotion Working Group meetings in order to improve the effectiveness of the formulated BCP.
In FY2018, we held company-wide emergency response headquarters training that included the participation of all directors as well as the President. For this training, we assumed that a large-scale earthquake occurred and worked primarily on the initial response to be taken immediately following the disaster.
We also held a safety confirmation system briefing for executives, as well as skill training for the Self-defense Fire-fighting Team organized by employees at the head office and Hino office. They acquired various technical skills related to making emergency reports, performing cardiopulmonary resuscitation, using fire extinguishers, etc.
Initial response at the office in the event of an emergency will also improve the effectiveness of the BCP, and the Self-defense Fire-fighting Team training will be rolled out nationwide.


BCM Promotion Working Group


Company-wide emergency response headquarters training

Initiatives for strengthening information security

The utilization of Information and Communications Technology (ICT) is indispensable for promoting work style reforms, improving operational efficiency and convenience, etc. However, the development of an information society is increasing, and with it information security risks are increasing as well, such as leakage of confidential or personal information, cyber-attacks, etc. As such, the METAWATER Group is making various efforts to combat information security risks.

Upgrading security countermeasures at construction and plant operation sites

In addition to strengthening information security in offices, the METAWATER Group is also taking measures to strengthen information security at construction sites and operation and maintenance sites for water and sewage treatment plants. At the same time, we conduct IT internal audits to identify issues and implement countermeasures. Opportunities for minor improvements were identified in FY2018 audits, and all of those issues were corrected, with continuous improvements being made.


Information security is imperative at construction sites

Information security training for all employees

Collective education and e-learning training is being carried out for all employees to improve their information security knowledge. For new employees in particular, all group companies are holding individual workshops. Easy-to-understand examples are used to raise awareness and strengthen information security.


Information security seminar for new graduates

Compliance

We believe that ensuring proper compliance and being widely trusted by society leads to sustainable growth of the METAWATER Group, as well as fosters a healthy corporate culture. Based on this understanding, we have established Compliance Rules that serve as guidelines for the Corporate Charter of Conduct, the Employees' Code of Conduct, and the compliance issues that the Group could implement and realize. In order to link these to specific action, various internal regulations have been established, ensuring thorough compliance with laws and internal rules.

Compliance Working Group

As a specialized working group under the CSR Committee, we have established the Compliance Working Group, which is comprised of five chief department managers and the Legal Division as the secretariat. They are engaged in activities that include checking on and improving implementation of compliance programs, studying and developing company-wide compliance education and measures, and offering consultation on issues received from the compliance helpline. In response to these matters, we hold emergency and temporary meetings in addition to regular quarterly meetings.

Compliance Education

The METAWATER Group provides lecture-based courses, including company-wide education provided at main bases throughout the country, company-wide e-learning, executive education, and education by rank.
From FY2018 to FY2019, we have been holding company-wide education based on the themes of protecting personal information, information security, and harassment prevention.
In FY2018, 31 meetings were held at eight bases, with 1,652 employees participating in the courses.

FY2018 - FY2019 actual and planned implementation of company-wide education

FY2018 (Actual)	Head office (14 times), Hino (4), Sapporo (2), Sendai (3), Nagoya (3), Osaka (3), Chiba (1), Omiya (1)
FY2019 (Planned)	Head office (5 times), Hino (4), Fukuoka (2), Nagoya (3), Osaka (3)

Disclosure policies

1 Basic policy

Based on our corporate mission, we aim to be a signature group trusted by society through our continuous contribution to it while meeting the expectations of our stakeholders with the purpose of accomplishing sustained development with society. In accordance with this view, we strive to have management with high transparency and reliability by disclosing the corporate information of our Group to the stakeholders and society in an appropriate, fair, and equitable manner on a timely basis. At the same time, we actively communicate with the stakeholders to enhance their understanding of our Group.

2 Information disclosure standards

We disclose the corporate information requested to be disclosed in accordance with the laws and regulations such as the Company Law and Financial Instruments Exchange Act as well as the rules laid down by the financial instruments exchange. We do so in the manner stipulated by each law or regulation.
In addition, even if the corporate information is not part of that requested by laws and regulations, we disclose it proactively as much as possible when we regard it to be useful for stakeholders or society.

3 Method of the information disclosure

We disclose corporate information requested to be disclosed in accordance with the above laws and regulations based on a method prescribed by each law and regulation. The regulation is also available on the corporate website.
With regards to the corporate information that is not part of that requested by the laws and regulations, we disclose it through the news media or corporate websites etc. in consideration of its importance and urgency.

4 Communication after disclosing information

With regards to the disclosed information, we make our best effort to communicate with stakeholders through announcements, provision of details, news coverage, answers to inquiries etc.
In addition, the opinions given by stakeholders through the said communication will be shared within our Group and used in future as part of reference data.

5 Quiet period

To prevent divulging closing information and to ensure fairness, the Company observes a quiet period from the day after the end of closing (including the quarterly end of closing) to the closing results announcement.
During the quiet period, the Company cannot give any announcement, provide details, news coverage, answers to inquiries, etc. about the financial results and performance forecast except information about a correction to the closing forecast.

6 Future prospects

The descriptions associated with future prospects among the performance prediction, business strategy and goals, etc. that our Group discloses may deviate from the actual result due to various factors because they are based on information we obtain at that time as well as certain assumptions judged as reasonable.

7 Improvement of the internal system

So that we can comply with the disclosure policy, carry out appropriate information disclosure and enhance communication with stakeholders, we build an internal system and improve company rules.

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Analysis on Operating Results

Descriptions and statements in relation to forward-looking projections disclosed in this document reflect the judgment of the Group as of March 31, 2019.

Operating Results Review for the Current Fiscal Year

During the fiscal year ended March 31, 2019, business conditions of the Japanese economy have recovered moderately. This is reflected in an improving labor market and increases in salary levels brought about as a result of the implementation of the economic and monetary policy set out by the Government. In terms of the world economy, despite uncertainty about the future such as Chinese economic slowdown and concern about trade conflict between the US and China, economic situation generally remains steady.

Under such circumstances, in light of environment surrounding our business and development of the Group, the Group has changed the corporate philosophy and established the Midterm Business Plan 2020 (from the fiscal year ended March 31, 2019 to fiscal year ending March 31, 2021), as a good refresh of the 10th anniversary of the Group foundation. In order to achieve the Plan, the Group tries our best to implement the priority measures: i) strategic development investment, ii) business strategy (enhancement of foundation field and expansion of growth field) and iii) efforts of sustainable ESG.

The domestic business environment in which the Group operates has continued to face challenges including a downward trend in the level of public spending, a sharp increase in labor costs arising from shortage of human resources, and some delays in civil engineering projects and construction work.

In the overseas businesses, the Group sought to accelerate business developments centered around Europe and the United States., where stable market growth is expected. As part of it, the Group has sought to achieve further business expansion especially through Aqua-Aerobic Systems, Inc., the subsidiary located in the United States, as our business base.

For the operating results of the Group for the fiscal year ended March 31, 2019, net sales was ¥117,342 million (5.8% increase year to year), operating income was ¥7,607 million (12.8% increase year to year), ordinary income was ¥7,624 million (17.9% increase year to year) and profit attributable to owners of parent was ¥5,170 million (31.5% increase year to year). Sales orders for the fiscal year ended March 31, 2019 was ¥123,807 million (5.9% decrease year to year), of which ¥142,347 million (4.8% increase year to year) was outstanding as of March 31, 2019.

The Group's business consists of two segments: Plant Engineering Business Segment including EPC as foundation field and foreign business as growth field and Service Solutions Business Segment including O&M as foundation field and PPP as growth field.

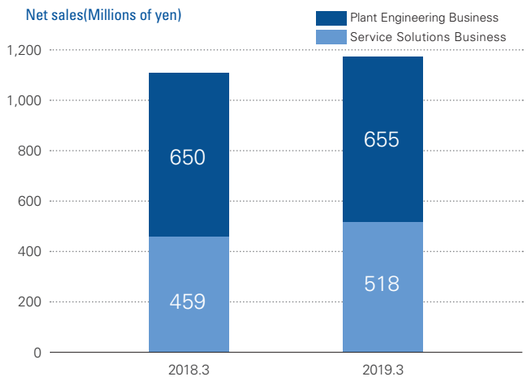
Operating results by segment are as follows:

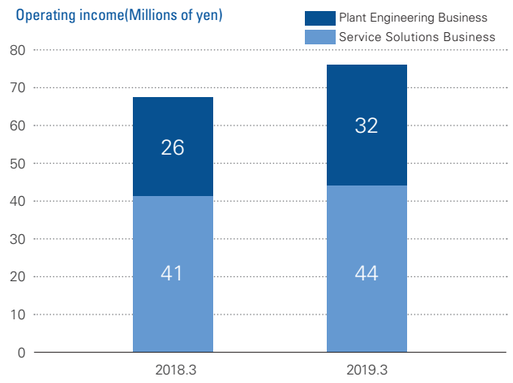
(Plant Engineering Business)

For the Plant Engineering Business, net sales amounted to ¥65,517 million (0.9% increase year to year) and operating income amounted to ¥3,191 million (21.6% increase year to year), due to a steady growth in EPC and foreign businesses. Outstanding order was ¥73,915 million (5.7% increase year to year).

(Service Solutions Business)

For the Service Solutions Business, net sales amounted to ¥51,824 million (12.8% increase year to year) due to a steady growth in O&M and PPP businesses. Operating income amounted to ¥4,416 million (7.1% increase year to year). Outstanding order was ¥49,892 million (19.1% decrease year to year).





Financial Position Review for the Current Fiscal Year

Total assets as of March 31, 2019 increased by ¥9,668 million compared to March 31, 2018 to ¥132,620 million. Current assets increased by ¥10,137 million compared to March 31, 2018 to ¥115,538 million due to an increase in cash and deposits and notes and accounts receivable - trade. Non-current assets decreased by ¥468 million compared to March 31, 2018 to ¥17,082 million due to a decrease in goodwill and customer-related assets.

Current liabilities increased by ¥7,399 million compared to March 31, 2018 to ¥56,326 million due to an increase in advances received, offsetting with a decrease in accounts payable - trade. Non-current liabilities decreased by ¥1,720 million compared to March 31, 2018 to ¥17,262 million due to a decrease in PFI and other project finance loans.

Total net assets increased by ¥3,988 million compared to March 31, 2018 to ¥59,031 million due to recognition of profit attributable to owners of parent and payment of dividends.

Cash Flow Review

The balance of cash and cash equivalents (hereinafter the "funds") as of March 31, 2019 increased by ¥2,819 million compared to March 31, 2018 to ¥27,796 million. An analysis of the cash flows for the fiscal year ended March 31, 2019 and related commentary thereon is presented below:

(Cash flows from operating activities)

The funds generated by operating activities was ¥6,236 million (¥1,061 million increase year to year): ¥7,624 million of income before income taxes, ¥5,361 million increase in advances received and ¥1,348 million of depreciation, offsetting with ¥4,165 million increase in notes and accounts receivable - trade and ¥2,165 million used for payment of income taxes.

(Cash flows from investing activities)

The funds used for investing activities was ¥805 million (¥62 million decrease year to year): ¥555 million used for purchase of property, plant and equipment and ¥114 million used for purchase of intangible assets.

(Cash flows from financing activities)

The funds used for financing activities was ¥2,617 million (¥1 million decrease year to year): ¥1,555 million used for payment of dividends and ¥833 million used for repayments of PFI and other project finance loans.

Issues to be Addressed

In the Group's main business in the domestic water and sewage treatment market, the financial difficulties of local governments and shortage of engineers have become evident, which are attributable to the population decline. In addition, measures for facilities and equipment, which are aging, as well as natural disasters such as large earthquakes and torrential rains are urgent issues. Under these circumstances, new government policies including revisions of the PFI Act and the Water Supply Act (promulgated in December 2018) are encouraging public-private partnerships using private funds, technology and know-how in public infrastructure development as well as studies of expanded coverage areas as measures to strengthen the management of water and sewage business operators. In addition, the creation of new business opportunities and business models backed by technological innovations such as IoT, AI and 5G is expected in the future.

On the other hand, overseas water and sewage market, mainly in Europe and the United States, are faced with needs for countermeasures against aging facilities and equipment and the tightening of environmental regulations. While in areas including emerging Asian countries, demand is growing for the development of a water and sewage infrastructure in conjunction with the increasing population and demand for water. Going forward, the emergence of business opportunities in line with these issues and needs of the water and sewage market of each country is expected to continue.

In light of this business environment, the Group has developed the Midterm business plan 2020, covering the period up to FY2020 (fiscal year ending March 31, 2021), as the first stage in achieving its long-term vision (ten-year-vision). The entire Company is working together to achieve the management targets for FY2020 of sales orders of ¥140.0 billion, net sales of ¥128.0 billion, and operating income of ¥9.0 billion.

Consolidated Balance Sheets

	Millions of yen		Thousands of U.S. dollars
	As of March 31, 2018	As of March 31, 2019	As of March 31, 2019
Assets			
Current assets			
Cash and deposits	*3 25,805	*3, *4 28,589	257,581
Notes and accounts receivable - trade	*3 72,164	*3 76,282	687,287
Work in process	2,623	4,670	42,075
Supplies	3,299	3,932	35,426
Other current assets	*4 1,508	*4 2,062	18,578
Total current assets	105,401	115,538	1,040,976
Non-current assets			
Property, plant and equipment			
Buildings and structures, net	1,189	1,300	11,712
Machinery and equipment, net	818	970	8,739
Tools, furniture and fixtures, net	423	462	4,162
Construction in progress	235	153	1,378
Other property, plant and equipment, net	315	301	2,711
Total property, plant and equipment	*2 2,982	*2 3,188	28,723
Intangible assets			
Software	890	517	4,658
Software in progress	94	29	261
Goodwill	1,842	1,670	15,046
Customer-related assets	2,769	2,539	22,875
Other intangible assets	1,463	1,314	11,838
Total intangible assets	7,060	6,072	54,707
Investments and other assets			
Investment securities	*1, *4 1,345	*1, *4 1,342	12,091
Long-term loans receivable	*4 224	*4 196	1,765
Guarantee deposits	1,528	1,604	14,451
Assets for retirement benefits	821	1,374	12,379
Deferred tax assets - non-current	3,541	3,268	29,444
Other non-current assets	47	35	315
Total investments and other assets	7,509	7,822	70,474
Total non-current assets	17,551	17,082	153,905
Total assets	122,952	132,620	1,194,882

	Millions of yen		Thousands of U.S. dollars
	As of March 31, 2018	As of March 31, 2019	As of March 31, 2019
Liabilities			
Current liabilities			
Accounts payable - trade	18,372	18,278	164,681
Electronically recorded obligations	8,155	8,380	75,502
Short-term loans payable	269	337	3,036
Current portion of PFI and other projects finance loans	*3 833	*3 844	7,604
Income taxes payable	2,173	2,419	21,794
Advances received	10,719	16,075	144,832
Provision for warranties for completed construction	857	1,361	12,262
Provision for loss on construction contracts	204	517	4,658
Other current liabilities	7,340	8,111	73,078
Total current liabilities	48,927	56,326	507,487
Non-current liabilities			
Long-term loans payable	2,050	1,847	16,641
PFI and other projects finance loans	*3 11,549	*3 10,705	96,450
Liability for retirement benefit	5,294	4,603	41,472
Other non-current liabilities	88	107	964
Total non-current liabilities	18,982	17,262	155,527
Total liabilities	67,910	73,589	663,023
Net assets			
Shareholders' equity			
Capital stock	11,946	11,946	107,631
Capital surplus	15,080	15,080	135,868
Retained earnings	30,214	33,830	304,802
Treasury stock	(0)	(0)	(0)
Total shareholders' equity	57,241	60,856	548,301
Accumulated other comprehensive income			
Valuation difference on available-for-sale securities	54	49	441
Foreign currency translation adjustment	84	(371)	(3,342)
Remeasurements of defined benefit plans	(2,474)	(1,645)	(14,821)
Total accumulated other comprehensive income	(2,335)	(1,967)	(17,722)
Non-controlling interests	136	142	1,279
Total net assets	55,042	59,031	531,858
Total liabilities and net assets	122,952	132,620	1,194,882

Consolidated Statement of Income and Statement of Comprehensive Income

[Consolidated Statement of Income]

	Millions of yen		Thousands of U.S. dollars
	Fiscal year ended March 31, 2018	Fiscal year ended March 31, 2019	Fiscal year ended March 31, 2019
Net sales	110,895	117,342	1,057,230
Cost of sales	*1 86,925	*1 91,442	823,876
Gross profit	23,970	25,899	233,345
Selling, general and administrative expenses	*2, *4 17,224	*2, *4 18,291	164,798
Operating income	6,745	7,607	68,537
Non-operating income:			
Interest income	193	194	1,747
Dividends income	34	56	504
Foreign exchange gain	—	152	1,369
Miscellaneous income	17	7	63
Total non-operating income	245	410	3,694
Non-operating expenses:			
Interest expenses	217	218	1,964
Loss on valuation of investment securities	—	87	783
Loss on disposal of non-current assets	*3 66	*3 84	756
Foreign exchange loss	236	—	—
Miscellaneous loss	4	3	27
Total non-operating expenses	526	394	3,549
Ordinary income	6,465	7,624	68,690
Income before income taxes	6,465	7,624	68,690
Income taxes - current	2,187	2,526	22,758
Income taxes - deferred	325	(80)	(720)
Total income taxes	2,513	2,446	22,038
Net income	3,951	5,178	46,652
Profit attributable to non-controlling interests	20	7	63
Profit attributable to owners of parent	3,931	5,170	46,580

[Consolidated Statement of Comprehensive Income]

	Millions of yen		Thousands of U.S. dollars
	Fiscal year ended March 31, 2018	Fiscal year ended March 31, 2019	Fiscal year ended March 31, 2019
Net income	3,951	5,178	46,652
Other comprehensive income			
Valuation difference on available-for-sale securities	21	(4)	(36)
Foreign currency translation adjustment	(49)	(455)	(4,099)
Remeasurements of defined benefit plans	364	828	7,460
Total other comprehensive income	*1 336	*1 367	3,306
Comprehensive income	4,287	5,545	49,959
(Details)			
Comprehensive income attributable to owners of parent	4,267	5,538	49,896
Comprehensive income attributable to non-controlling interests	20	7	63

Consolidated Statement of Changes in Shareholders' Equity

Fiscal year ended March 31, 2018

(Millions of yen)

	Shareholders' equity				
	Capital stock	Capital surplus	Retained earnings	Treasury stock	Total shareholders' equity
Balance at April 1, 2017	11,946	15,080	27,787	(0)	54,814
Changes during the year					
Dividends from surplus			(1,503)		(1,503)
Profit attributable to owners of parent			3,931		3,931
Purchase of treasury stock				(0)	(0)
Changes in other equity, net					
Total changes during the year	—	—	2,427	(0)	2,427
Balance at March 31, 2018	11,946	15,080	30,214	(0)	57,241

	Accumulated other comprehensive income					
	Valuation difference on available-for-sale securities	Foreign currency translation adjustment	Remeasurements of defined benefit plans	Total accumulated other comprehensive income	Non-controlling interests	Total net assets
Balance at April 1, 2017	32	133	(2,838)	(2,671)	117	52,260
Changes during the year						
Dividends from surplus						(1,503)
Profit attributable to owners of parent						3,931
Purchase of treasury stock						(0)
Changes in other equity, net	21	(49)	364	336	18	354
Total changes during the year	21	(49)	364	336	18	2,782
Balance at March 31, 2018	54	84	(2,474)	(2,335)	136	55,042

Fiscal year ended March 31, 2019

(Millions of yen)

	Shareholders' equity				
	Capital stock	Capital surplus	Retained earnings	Treasury stock	Total shareholders' equity
Balance at April 1, 2018	11,946	15,080	30,214	(0)	57,241
Changes during the year					
Dividends from surplus			(1,555)		(1,555)
Profit attributable to owners of parent			5,170		5,170
Purchase of treasury stock				(0)	(0)
Changes in other equity, net					
Total changes during the year	—	—	3,615	(0)	3,614
Balance at March 31, 2019	11,946	15,080	33,830	(0)	60,856

	Accumulated other comprehensive income					
	Valuation difference on available-for-sale securities	Foreign currency translation adjustment	Remeasurements of defined benefit plans	Total accumulated other comprehensive income	Non-controlling interests	Total net assets
Balance at April 1, 2018	54	84	(2,474)	(2,335)	136	55,042
Changes during the year						
Dividends from surplus						(1,555)
Profit attributable to owners of parent						5,170
Purchase of treasury stock						(0)
Changes in other equity, net	(4)	(455)	828	367	5	373
Total changes during the year	(4)	(455)	828	367	5	3,988
Balance at March 31, 2019	49	(371)	(1,645)	(1,967)	142	59,031

(Thousands of U.S. dollars)

	Shareholders' equity				
	Capital stock	Capital surplus	Retained earnings	Treasury stock	Total shareholders' equity
Balance at April 1, 2018	107,631	135,868	272,222	(0)	515,731
Changes during the year					
Dividends from surplus			(14,010)		(14,010)
Profit attributable to owners of parent			46,580		46,580
Purchase of treasury stock				(0)	(0)
Changes in other equity, net					
Total changes during the year	—	—	32,570	(0)	32,561
Balance at March 31, 2019	107,631	135,868	304,802	(0)	548,301

	Accumulated other comprehensive income					
	Valuation difference on available-for-sale securities	Foreign currency translation adjustment	Remeasurements of defined benefit plans	Total accumulated other comprehensive income	Non-controlling interests	Total net assets
Balance at April 1, 2018	486	756	(22,290)	(21,037)	1,225	495,918
Changes during the year						
Dividends from surplus						(14,010)
Profit attributable to owners of parent						46,580
Purchase of treasury stock						(0)
Changes in other equity, net	(36)	(4,099)	7,460	3,306	45	3,360
Total changes during the year	(36)	(4,099)	7,460	3,306	45	35,931
Balance at March 31, 2019	441	(3,342)	(14,821)	(17,722)	1,279	531,858

Consolidated Statement of Cash Flows

	Millions of yen		Thousands of U.S. dollars
	Fiscal year ended March 31, 2018	Fiscal year ended March 31, 2019	Fiscal year ended March 31, 2019
Cash flows from operating activities			
Income before income taxes	6,465	7,624	68,690
Depreciation	1,441	1,348	12,145
Amortization of goodwill	140	138	1,243
Increase/(decrease) in liabilities for retirement benefits	(349)	(156)	(1,405)
(Increase)/decrease in assets for retirement benefits	68	(550)	(4,955)
Increase/(decrease) in provision for warranties for completed construction	(194)	510	4,595
Increase/(decrease) in provision for loss on construction contracts	37	313	2,820
Interest income and dividends income	(228)	(250)	(2,252)
Interest expenses	217	218	1,964
Foreign exchange (gain)/loss	209	(174)	(1,567)
Loss on disposal of property, plant and equipment	66	84	756
Loss/(gain) on valuation of investment securities	—	87	783
(Increase)/decrease in notes and accounts receivable	(4,311)	(4,165)	(37,525)
(Increase)/decrease in inventory	1,292	(2,707)	(24,389)
Increase/(decrease) in notes and accounts payable - trade	(858)	248	2,234
Increase/(decrease) in advances received	2,067	5,361	48,301
Other cash flows from operating activities	1,496	441	3,973
Subtotal	7,562	8,372	75,430
Interest and dividends income received	228	250	2,252
Interest expenses paid	(220)	(220)	(1,982)
Income taxes paid	(2,394)	(2,165)	(19,506)
Cash flows from operating activities	5,175	6,236	56,185
Cash flows from investing activities			
Net (increase)/decrease in time deposits	50	34	306
Purchase of property, plant and equipment	(527)	(555)	(5,000)
Purchase of intangible assets	(217)	(114)	(1,027)
Purchase of investment securities	(110)	(95)	(855)
Payments of loans receivable	(1)	—	—
Collection of loans receivable	28	27	243
Other cash flows from investing activities	(91)	(103)	(928)
Net cash used in investing activities	(868)	(805)	(7,252)

	Millions of yen		Thousands of U.S. dollars
	Fiscal year ended March 31, 2018	Fiscal year ended March 31, 2019	Fiscal year ended March 31, 2019
Cash flows from financing activities			
Proceeds from short-term loans payable	452	55	495
Repayments of short-term loans payable	(740)	(282)	(2,540)
Repayments of PFI and other projects finance loans	(825)	(833)	(7,505)
Purchase of treasury stock	(0)	(0)	(0)
Cash dividends paid	(1,503)	(1,555)	(14,010)
Cash dividends paid to non-controlling interests	(1)	(1)	(9)
Cash flows from financing activities	(2,619)	(2,617)	(23,578)
Effect of exchange rate change on cash and cash equivalents	(63)	4	36
Net increase/(decrease) in cash and cash equivalents	1,625	2,819	25,398
Cash and cash equivalents at April 1	23,352	24,977	225,038
Cash and cash equivalents at March 31	*1 24,977	*1 27,796	250,436

[Notes to Consolidated Financial Statements]

(Basis of Presentation)

The accompanying consolidated financial statements of METAWATER Co., Ltd. (the "Company") and consolidated subsidiaries are prepared on the basis of accounting principles generally accepted in Japan, which are different in certain respects as to the application and disclosure requirements of International Financial Reporting Standards, and are compiled from the consolidated financial statements prepared by the Company as required by the Financial Instruments and Exchange Act of Japan.

Certain amounts in the prior year's financial statements have been reclassified to conform to the current year's presentation.

(Presentation of Amounts in the Consolidated Financial Statements)

The yen amounts are truncated at millions and U.S. dollar amounts are rounded off in thousands. The total Japanese yen and U.S. dollar amounts shown in the financial statements do not necessarily agree with the sum of the individual amounts. U.S. dollar amounts presented in the financial statements are included solely for convenience. The rate of ¥110.99 to US$1.00, prevailing on March 31, 2019, has been used for translation into U.S. dollar amounts in the financial statements. The inclusion of such amounts should not be construed as a representation that Japanese yen amounts have been or could in the future be converted into U.S. dollars at that or any other rate.

(Principles of Consolidation)

The accompanying consolidated financial statements include the accounts of the Company and any significant companies controlled directly or indirectly by the Company.

Investments in companies over which the Company exercises significant influence in terms of their operating and financial policies have been accounted for by the equity method.

As of March 31, 2019, the numbers of consolidated subsidiaries were 9 (9 in 2018). Non-consolidated subsidiaries whose combined assets, net sales, profit and retained earnings are not significant in the related consolidated totals, have not been consolidated with the Company. Investments in non-consolidated subsidiaries and affiliated companies which have immaterial effect on the consolidated financial statements are accounted for at cost without applying the equity method of accounting. METAWATER USA, INC. and four other subsidiaries are consolidated using their financial statements as of their fiscal year end, which falls on December 31 and necessary adjustments are made to their financial statements to reflect any significant transactions from January 1 to March 31. All significant intercompany balances and transactions have been eliminated in consolidation.

(Summary of Significant Accounting Policies)

1. Valuation standard and methods for significant assets

(1) Securities

1)Available-for-sale securities

Available-for-sale securities with market value

Available-for-sale securities with market value are stated at fair value based on the market price as of the end of the accounting period. Any unrealized gain or loss, net of applicable taxes is reported as a component of accumulated other comprehensive income. The cost of securities sold is calculated using the moving average method.

Available-for-sale securities without market value

Available-for-sale securities without market value are stated at cost using the moving average method.

(2) Inventory

1) Supplies

Supplies are stated at cost using the weighted average method. (Balance sheet amounts are written down on the basis of any decreased profitability.)

2) Work in process

Work in process is stated at cost using the individual identification method.

(3) Derivatives

Derivatives are stated at fair value.

2. Method of depreciation and amortization

(1) Property, plant and equipment

Depreciation of property, plant and equipment is mainly computed by the declining-balance method over the applicable useful lives. However, the buildings acquired on and after April 1, 1998 (excluding accompanying facilities) and the accompanying facilities and structures acquired on and after April 1, 2016 are depreciated by the straight-line method.

Useful lives of assets are principally as follows:

Buildings and structures:	2 to 50 years
Machinery and equipment:	2 to 17 years

(2) Intangible assets

Intangible assets are amortized by the straight-line method. Computer software for internal use is amortized by the straight-line method over the estimated useful life of 5 years. Customer-related assets are amortized by the straight-line method over the estimated useful life of 17 years.

3. Accounting standard for significant allowances and provisions

(1) Allowance for doubtful accounts

To provide for potential loss on receivables, the Company provides an allowance for the expected amount of irrecoverable receivables. Allowances for ordinary debt are computed based on the historical rate of default. For certain debts, such as those where recovery is doubtful, the Company considers the likelihood of recovery on an individual basis and records an allowance for the amount of debt expected to be unrecoverable. Allowance for doubtful accounts was not recorded at the end of the fiscal year ended March 31, 2019.

(2) Provision for warranties for completed construction

The Company records provision for warranties for completed construction based on the estimated amount of future warranties for construction revenue in order to provide for costs of free-of-charge repair under defect liability for contract construction.

(3) Provision for loss on construction contracts

In order to provide for potential loss on construction contracts, the Company records provision for loss on construction contracts at an estimated amount of loss on contracts undelivered at the end of the fiscal year, loss of which are expected to be incurred and such expected amount of loss can be reasonably estimated.

4. Accounting method for retirement benefits

(1) Method of allocating projected retirement benefit obligation

In calculating the retirement benefit obligation, the benefit formula basis is used to allocate the projected retirement benefit obligation to the estimated periods of service of the eligible employees until the end of the fiscal year.

(2) Method for amortizing actuarial gain or loss and prior service cost

Prior service cost is amortized as incurred by the straight-line method over a period not exceeding the estimated average remaining service period of employees (10 to 14 years) at the time of occurrence.

Actuarial gain or loss is amortized from the fiscal year following the year in which the gain or loss is recognized, amortized by the straight-line method over a period not exceeding the average remaining service period of the employees (10 to 14 years) at the time of occurrence.

5. Recognition for revenue and cost

For long-term construction contracts whose outcome can be estimated reliably, the percentage-of-completion method is adopted. The stage of completion of a contract is determined by the percentage of the cost incurred to date to the estimated total cost. When the outcome of the construction contracts cannot be estimated reliably, the completed-contract method is adopted.

6. Foreign currency translation

Monetary receivables and payables in foreign currencies are translated into yen using the spot exchange rates on the consolidated balance sheet date, and translation adjustments are recorded as gains or losses. For foreign subsidiaries assets and liabilities are translated into yen using the spot exchange rates on the consolidated balance sheet date; revenues and expenses are translated into yen using the average exchange rates during the period; and translation adjustments are included in foreign currency translation adjustment under net assets.

7. Hedge accounting

(1) Hedge accounting method

As interest rate swaps meet the requirements for short-cut method, the accounting is applied to them.

(2) Hedging instruments and hedged items

Hedging instruments: Interest rate swaps

Hedged items: interest on loans payable

(3) Hedging policy

Interest rate swaps are used on some of loans payable from financial institutions to avoid risks resulting from interest rate fluctuation.

(4) Method for evaluating hedging effectiveness

The evaluation of hedging effectiveness is omitted for interest rate swaps as the requirements for short-cut method are met.

8. The amortization method and amortization period of goodwill

Goodwill is amortized by the straight-line method over a period of 15 years.

9. Cash and cash equivalents in the consolidated statement of cash flows

Cash and cash equivalents consist of cash at hand, demand deposits at banks, and highly liquid short-term investments with negligible risk of fluctuation in value and maturities of three months or less.

10. Consumption tax

Consumption tax and local consumption tax are excluded from respective transaction amounts.

(Unapplied Accounting Standards, etc.)

- Accounting Standards Board of Japan (ASBJ) Statement No. 29 "Accounting Standard for Revenue Recognition" (March 30, 2018)
- ASBJ Guidance No. 30 "Implementation Guidance on Accounting Standard for Revenue Recognition" (March 30, 2018)

(1) Outline

A comprehensive accounting standard on revenue recognition. Revenue is recognized by applying the following five steps.

Step 1: Identify the contract with a customer

Step 2: Identify performance obligations in the contract

Step 3: Determine the transaction price

Step 4: Allocate the transaction price to the performance obligations in the contract

Step 5: Recognize revenue when (or as) the performance obligations are satisfied

(2) Scheduled date of application

They are scheduled to be applied from the beginning of the fiscal year ending March 31, 2022.

(3) Impact of application of the accounting standard, etc.

The impact of application is under evaluation at the time of preparing the consolidated financial statements.

(Changes in Presentation Methods)

(Changes due to the application of "Partial Amendments to Accounting Standard for Tax Effect Accounting")

The Company has applied "Partial Amendments to Accounting Standard for Tax Effect Accounting" (ASBJ Statement No. 28, February 16, 2018; hereinafter the "Partial Amendments to Tax Effect Accounting Standard") from the beginning of the fiscal year ended March 31, 2019. Accordingly, deferred tax assets are presented under investments and other assets, deferred tax liabilities are presented under non-current liabilities, and changes have been made to the notes to income taxes.

As a result, in the consolidated balance sheets for the fiscal year ended March 31, 2018, deferred tax assets - current of ¥1,492 million under current assets and ¥39 million of the ¥115 million of deferred tax liabilities included in other current liabilities under current liabilities have been reclassified and included in ¥3,541 million of deferred tax assets - non-current under investments and other assets, and ¥76 million of the ¥115 million of deferred tax liabilities included in other current liabilities under current liabilities have been reclassified and included in ¥88 million of other non-current liabilities under non-current liabilities.

In addition, the notes to income taxes have been changed to include the details stated in Note 8 (excluding the total amount of valuation allowance) and Note 9 of "Accounting Standard for Tax Effect Accounting" as set forth in Paragraphs 3 through 5 of the Partial Amendments to Tax Effect Accounting Standard. However, among such details, those relating to the fiscal year ended March 31, 2018 have been omitted, in accordance with transitional provisions as set forth in Paragraph 7 of the Partial Amendments to Tax Effect Accounting Standard.

(Notes to Consolidated Balance Sheets)

*1. Investments in non-consolidated subsidiaries and affiliated companies are as follows:

	As of March 31, 2018 (Millions of yen)	As of March 31, 2019 (Millions of yen)	As of March 31, 2019 (Thousands of U.S. dollars)
Investment securities	1,020	1,020	9,190

*2. Accumulated depreciation of property, plant and equipment

	As of March 31, 2018 (Millions of yen)	As of March 31, 2019 (Millions of yen)	As of March 31, 2019 (Thousands of U.S. dollars)
Accumulated depreciation of property, plant and equipment	3,491	3,827	34,480

*3. "Current portion of PFI and other project finance loans" and "PFI and other project finance loans" are loans payable secured by the PFI business from financial institutions to WATER NEXT YOKOHAMA Co., Ltd., which is a special purpose company established for the PFI business and the Company's consolidated subsidiary, and other consolidated subsidiaries.

The amounts of assets including accounts receivable of the special purpose company corresponding to the above PFI and other project finance loans are as follows:

	As of March 31, 2018 (Millions of yen)	As of March 31, 2019 (Millions of yen)	As of March 31, 2019 (Thousands of U.S. dollars)
Cash and deposits	1,534	1,599	14,406
Notes and accounts receivable - trade	13,630	13,393	120,668
Total	15,164	14,993	135,084

The following assets eliminated in the consolidation procedures are pledged as security.

	As of March 31, 2018 (Millions of yen)	As of March 31, 2019 (Millions of yen)	As of March 31, 2019 (Thousands of U.S. dollars)
Investments in subsidiaries	152	152	1,369
Long-term loans receivable	524	487	4,387
Total	676	639	5,757

*4. The following assets are pledged as security for PFI and other project finance loans to subsidiaries and affiliated companies operating the PFI business (non-consolidated).

	As of March 31, 2018 (Millions of yen)	As of March 31, 2019 (Millions of yen)	As of March 31, 2019 (Thousands of U.S. dollars)
Investment securities	405	408	3,676
Long-term loans receivable	211	195	1,756
Total	617	603	5,432

*5. Guarantees of indebtedness

The Company provides guarantees to the following companies for their loans payable from financial institutions.

(1) Guarantee for loans payable

	As of March 31, 2018 (Millions of yen)	As of March 31, 2019 (Millions of yen)	As of March 31, 2019 (Thousands of U.S. dollars)
Osaka Bioenergy Co., Ltd.	161	144	1,297

(2) Performance guarantee

	As of March 31, 2018 (Millions of yen)	As of March 31, 2019 (Millions of yen)	As of March 31, 2019 (Thousands of U.S. dollars)
Ariake Water Management Co., Ltd.	25	27	243
Aizuwakamatsu Aqua Partner Co., Ltd.	583	542	4,883
Sasebo Aqua Solution Co., Ltd.	255	242	2,180
Sorami Bio Partners Co., Ltd.	63	63	567
Northern Akita Eco-resource Management Co., Ltd.	17	17	153
Ofunato Sewer Management Co., Ltd.	—	13	117
Gotemba Oyama Eco Partners Co., Ltd.	—	14	126
Total	946	922	8,307

(Notes to Consolidated Statement of Income)

*1. Provision for loss on construction contracts included in cost of sales are as follows:

Fiscal year ended March 31, 2018 (Millions of yen)	Fiscal year ended March 31, 2019 (Millions of yen)	Fiscal year ended March 31, 2019 (Thousands of U.S. dollars)
63	363	3,270

*2. The major items and their amounts of selling, general and administrative expenses are as follows:

	Fiscal year ended March 31, 2018 (Millions of yen)	Fiscal year ended March 31, 2019 (Millions of yen)	Fiscal year ended March 31, 2019 (Thousands of U.S. dollars)
Salaries and allowances	4,066	4,050	36,489
Bonuses	1,540	1,466	13,208
Retirement benefit expenses	525	501	4,513
Provision for warranties for completed construction	(243)	446	4,018
Research and development expenses	1,706	1,908	17,190

*3. The details of loss on disposal of non-current assets are as follows:

Fiscal year ended March 31, 2018	Fiscal year ended March 31, 2019
Loss on sales and retirement of machinery and equipment	Loss on sales and retirement of machinery and equipment

*4. Total amount of research and development expenses included in general and administrative expenses and in production cost in the fiscal year are as follows:

Fiscal year ended March 31, 2018 (Millions of yen)	Fiscal year ended March 31, 2019 (Millions of yen)	Fiscal year ended March 31, 2019 (Thousands of U.S. dollars)
1,706	1,908	17,190

(Notes to Consolidated Statement of Comprehensive Income)

*1. The following table presents reclassification adjustments and tax effects allocated to each component of other comprehensive income for the years ended March 31, 2019 and 2018

	Fiscal year ended March 31, 2018 (Millions of yen)	Fiscal year ended March 31, 2019 (Millions of yen)	Fiscal year ended March 31, 2019 (Thousands of U.S. dollars)
Valuation difference on available-for-sale securities			
Amount arising during the year	30	(7)	(63)
Reclassification adjustments	—	—	—
Amount before tax effect	30	(7)	(63)
Tax effect	(9)	3	27
Valuation difference on available-for-sale securities	21	(4)	(36)
Foreign currency translation adjustment			
Amount recognized during the year	(49)	(455)	(4,099)
Remeasurements of defined benefit plans			
Amount recognized during the year	(171)	533	4,802
Reclassification adjustments	695	659	5,937
Before tax effect adjustment	524	1,193	10,748
Tax effects	(160)	(365)	(3,288)
Remeasurements of defined benefit plans	364	828	7,460
Total other comprehensive income	336	367	3,306

(Notes to Consolidated Statement of Changes in Shareholders' Equity)

Fiscal year ended March 31, 2018

1. Shares issued

Type of shares	Number of shares as of April 1, 2017	Increase	Decrease	Number of shares as of March 31, 2018
Common stock (shares)	25,923,500	—	—	25,923,500

2. Treasury stock

Type of shares	Number of shares as of April 1, 2017	Increase	Decrease	Number of shares as of March 31, 2018
Common stock (shares)	44	47	—	91

(Details of the changes)

Increase resulting from purchase of shares less than one unit: 47 shares

3. Dividends

(1) Dividends paid

Resolution	Type of shares	Total amount of dividends (Millions of yen)	Dividend per share (Yen)	Cut-off date	Effective date
Board of Directors' meeting held on May 23, 2017	Common stock	751	29.00	March 31, 2017	June 8, 2017
Board of Directors' meeting held on November 14, 2017	Common stock	751	29.00	September 30, 2017	December 4, 2017

(2) Dividends whose record date falls in the fiscal year ended March 31, 2018, but whose effective date is in the following fiscal year

Resolution	Type of shares	Source of dividends	Total amount of dividends (Millions of yen)	Dividend per share (Yen)	Cut-off date	Effective date
Board of Directors' meeting held on May 23, 2018	Common stock	Retained earnings	751	29.00	March 31, 2018	June 7, 2018

Fiscal year ended March 31, 2019

1. Shares issued

Type of shares	Number of shares as of April 1, 2018	Increase	Decrease	Number of shares as of March 31, 2019
Common stock (shares)	25,923,500	—	—	25,923,500

2. Treasury stock

Type of shares	Number of shares as of April 1, 2018	Increase	Decrease	Number of shares as of March 31, 2019
Common stock (shares)	91	59	—	150

(Details of the changes)

Increase resulting from purchase of shares less than one unit: 59 shares

3. Dividends

(1) Dividends paid

Resolution	Type of shares	Total amount of dividends (Millions of yen)	Dividend per share (Yen)	Cut-off date	Effective date
Board of Directors' meeting held on May 23, 2018	Common stock	751	29.00	March 31, 2018	June 7, 2018
Board of Directors' meeting held on November 13, 2018	Common stock	803	31.00	September 30, 2018	December 4, 2018

Resolution	Type of shares	Total amount of dividends (Thousands of U.S. dollars)	Dividend per share (U.S. dollars)	Cut-off date	Effective date
Board of Directors' meeting held on May 23, 2018	Common stock	6,766	0.26	March 31, 2018	June 7, 2018
Board of Directors' meeting held on November 13, 2018	Common stock	7,234	0.27	September 30, 2018	December 4, 2018

(2) Dividends whose record date falls in the fiscal year ended March 31, 2019, but whose effective date is in the following fiscal year

Resolution	Type of shares	Source of dividends	Total amount of dividends (Millions of yen)	Dividend per share (Yen)	Cut-off date	Effective date
Board of Directors' meeting held on May 22, 2019	Common stock	Retained earnings	803	31.00	March 31, 2019	June 6, 2019

Resolution	Type of shares	Source of dividends	Total amount of dividends (Thousands of U.S. dollars)	Dividend per share (U.S. dollars)	Cut-off date	Effective date
Board of Directors' meeting held on May 22, 2019	Common stock	Retained earnings	7,234	0.27	March 31, 2019	June 6, 2019

(Notes to Consolidated Statement of Cash Flows)

*1. Cash and cash equivalents in the consolidated statement of cash flows are reconciled to cash and deposits in the consolidated balance sheets as follows:

	Fiscal year ended March 31, 2018 (Millions of yen)	Fiscal year ended March 31, 2019 (Millions of yen)	Fiscal year ended March 31, 2019 (Thousands of U.S. dollars)
Cash and deposits	25,805	28,589	257,581
Time deposits with maturities of over three months	(827)	(792)	(7,135)
Cash and cash equivalents	24,977	27,796	250,436

(Financial Instruments)

1. Overview

(1) Group policy for financial instruments

The Group restricts its fund management to short-term deposits and raises funds through loans from financial institutions including banks. Derivatives are used for receivables and payables arising from transactions associated with the actual demand, and the Group does not intend to make speculative transactions.

(2) Type of financial instruments, related risk and risk management system

Although notes and accounts receivable - trade are exposed to customer credit risk, the Group works to reduce such risk in accordance with credit management rules. Although trade receivables in foreign currencies arising from overseas operations are exposed to currency fluctuation risk, they are hedged with forward foreign currency contracts where necessary.

Investment securities are mainly limited to shares of companies with which the Group has built a business relationship. Listed stocks are exposed to risk of fluctuation in the market value, while they are marked to market on a quarterly basis.

The payment terms of notes and accounts payable - trade are mostly one year or less than one year.

Although some of trade payables are denominated in foreign currencies and are exposed to currency fluctuation risk, they are hedged with forward foreign currency contracts where necessary.

Loans payable are mainly used for the acquisition of shares of subsidiaries, with the maximum maturity period of 7 years after the balance sheet date. PFI and other project finance loans are intended to raise funds for specific businesses such as the PFI business, with the maximum maturity period of 15 years and 8 months after the accounting period. Although some of PFI and other project finance loans are exposed to risk of interest rate fluctuation, while they are hedged with derivatives (interest rate swaps).

Derivatives include forward foreign currency contracts which are used to hedge currency fluctuation risk associated with trade receivables and payables, and interest rate swaps which are used to hedge risk of fluctuation in interest on loans payable. The evaluation of hedging effectiveness is omitted based on the judgment that interest rate swaps meet the requirements for short-cut method.

2. Fair value of financial instruments

The carrying value of financial instruments on the consolidated balance sheets as of March 31, 2019 and 2018 and estimated fair value are shown in the following table. The financial instruments whose fair value is deemed extremely difficult to determine are not included in the table below (please see Note 2).

As of March 31, 2018

	Carrying value (Millions of yen)	Fair value (Millions of yen)	Difference (Millions of yen)
(1) Cash and deposits	25,805	25,805	—
(2) Notes and accounts receivable - trade	72,164	72,061	(103)
(3) Investment securities			
Available-for-sale securities	111	111	—
Total assets	98,081	97,978	(103)
(1) Accounts payable - trade	18,372	18,372	—
(2) Electronically recorded obligations	8,155	8,155	—
(3) Short-term loans payable	269	269	—
(4) Current portion of PFI and other projects finance loans	833	833	—
(5) Long-term loans payable	2,050	2,053	2
(6) PFI and other projects finance loans	11,549	11,819	270
(7) Derivatives	—	—	—
Total liabilities	41,230	41,503	272

As of March 31, 2019

	Carrying value (Millions of yen)	Fair value (Millions of yen)	Difference (Millions of yen)
(1) Cash and deposits	28,589	28,589	—
(2) Notes and accounts receivable - trade	76,282	76,332	49
(3) Investment securities			
Available-for-sale securities	103	103	—
Total assets	104,976	105,025	49
(1) Accounts payable - trade	18,278	18,278	—
(2) Electronically recorded obligations	8,380	8,380	—
(3) Short-term loans payable	337	337	—
(4) Current portion of PFI and other projects finance loans	844	844	—
(5) Long-term loans payable	1,847	1,840	(6)
(6) PFI and other projects finance loans	10,705	10,974	269
(7) Derivatives	—	—	—
Total liabilities	40,392	40,655	262

	Carrying value (Thousands of U.S. dollars)	Fair value (Thousands of U.S. dollars)	Difference (Thousands of U.S. dollars)
(1) Cash and deposits	257,581	257,581	—
(2) Notes and accounts receivable - trade	687,287	687,737	441
(3) Investment securities			
Available-for-sale securities	928	928	—
Total assets	945,814	946,256	441
(1) Accounts payable - trade	164,681	164,681	—
(2) Electronically recorded obligations	75,502	75,502	—
(3) Short-term loans payable	3,036	3,036	—
(4) Current portion of PFI and other projects finance loans	7,604	7,604	—
(5) Long-term loans payable	16,641	16,578	(54)
(6) PFI and other projects finance loans	96,450	98,873	2,423
(7) Derivatives	—	—	—
Total liabilities	363,924	366,294	2,360

(Note 1) Computation method of fair values of financial instruments and other matters concerning securities and derivatives

Assets

(1) Cash and deposits

The fair value of cash and deposits is based on their carrying amount, since the fair value approximates their carrying amount due to the short maturity period of the instrument.

(2) Notes and accounts receivable - trade

The fair value of notes and accounts receivable - trade is based on their present value calculated by discounting the amount of each receivable classified by a certain period using a discount rate that reflects the credit risk and the period until the maturity.

(3) Investment securities

The fair value of stocks is based on their prices quoted on the concerned stock exchanges.

Liabilities

(1) Accounts payable - trade, (2) Electronically recorded obligations, (3) Short-term loans payable and (4) Current portion of PFI and other project finance loans

The fair value of accounts payable - trade, electronically recorded obligations, short-term loans payable and current portion of PFI and other project finance loans is based on their carrying amounts, since the fair value approximates their carrying amounts due to the short maturity period of the instruments.

(5) Long-term loans payable and (6) PFI and other project finance loans

The fair value of long-term loans payable and PFI and other project finance loans is computed based on their present value calculated by discounting the aggregate value of principal and interest using the discount rate at which a similar and new borrowing is assumed to be made.

(7) Derivatives

The fair value of interest rate swaps is based on the quoted price obtained from the counterparty financial institution.

Since interest rate swaps under short-cut method are treated together with long-term loans payable and PFI and other project finance loans that are subject to hedging, their fair value is included in the fair value of PFI and other project finance loans.

(Note 2) The amount of financial instruments recorded in the consolidated balance sheets, of which it is deemed extremely difficult to determine the fair value.

Category	As of March 31, 2018 (Millions of yen)	As of March 31, 2019 (Millions of yen)	As of March 31, 2019 (Thousands of U.S. dollars)
Unlisted stocks (including shares of non-consolidated subsidiaries and affiliated companies)	1,233	1,238	11,154

Since there is no quoted market price for the above item and it is deemed extremely difficult to determine its fair value, the item is not included in "(3) Investment securities".

(Note 3) The redemption schedule for monetary receivables subsequent to the consolidated closing date

As of March 31, 2018

	Due in one year or less (Millions of yen)	Due after one year through five years (Millions of yen)	Due after five years through ten years (Millions of yen)	Due after ten years (Millions of yen)
Cash and deposits	25,805	—	—	—
Notes and accounts receivable - trade	60,182	3,580	3,876	4,524
Total	85,987	3,580	3,876	4,524

As of March 31, 2019

	Due in one year or less (Millions of yen)	Due after one year through five years (Millions of yen)	Due after five years through ten years (Millions of yen)	Due after ten years (Millions of yen)
Cash and deposits	28,589	—	—	—
Notes and accounts receivable - trade	62,894	4,892	3,971	4,524
Total	91,483	4,892	3,971	4,524

	Due in one year or less (Thousands of U.S. dollars)	Due after one year through five years (Thousands of U.S. dollars)	Due after five years through ten years (Thousands of U.S. dollars)	Due after ten years (Thousands of U.S. dollars)
Cash and deposits	257,581	—	—	—
Notes and accounts receivable - trade	566,663	44,076	35,777	40,760
Total	824,245	44,076	35,777	40,760

(Note 4) The repayment schedule for loans payable and PFI and other project finance loans subsequent to the consolidated closing date

As of March 31, 2018

	Due in one year or less (Millions of yen)	Due after one year through five years (Millions of yen)	Due after five years through ten years (Millions of yen)	Due after ten years through fifteen years (Millions of yen)	Due after fifteen years (Millions of yen)
Loans payable	269	1,253	796	—	—
PFI and other projects finance loans	833	3,436	3,787	3,624	701
Total	1,103	4,690	4,584	3,624	701

As of March 31, 2019

	Due in one year or less (Millions of yen)	Due after one year through five years (Millions of yen)	Due after five years through ten years (Millions of yen)	Due after ten years through fifteen years (Millions of yen)	Due after fifteen years (Millions of yen)
Loans payable	337	1,292	554	—	—
PFI and other projects finance loans	844	3,477	3,694	3,532	—
Total	1,181	4,769	4,249	3,532	—

	Due in one year or less (Thousands of U.S. dollars)	Due after one year through five years (Thousands of U.S. dollars)	Due after five years through ten years (Thousands of U.S. dollars)	Due after ten years through fifteen years (Thousands of U.S. dollars)	Due after fifteen years (Thousands of U.S. dollars)
Loans payable	3,036	11,640	4,991	—	—
PFI and other projects finance loans	7,604	31,327	33,282	31,822	—
Total	10,640	42,967	38,282	31,822	—

(Securities)

Available-for-sale securities

As of March 31, 2018

Category	Carrying value (Millions of yen)	Acquisition cost (Millions of yen)	Unrealized gain (loss) (Millions of yen)
Amounts in the consolidated balance sheets exceeding acquisition cost:			
Stocks	111	33	78
Total	111	33	78

As of March 31, 2019

Category	Carrying value (Millions of yen)	Acquisition cost (Millions of yen)	Unrealized gain (loss) (Millions of yen)
Amounts in the consolidated balance sheets exceeding acquisition cost:			
Stocks	103	33	70
Total	103	33	70

Category	Carrying value (Thousands of U.S. dollars)	Acquisition cost (Thousands of U.S. dollars)	Unrealized gain (loss) (Thousands of U.S. dollars)
Amounts in the consolidated balance sheets exceeding acquisition cost:			
Stocks	928	297	630
Total	928	297	630

(Derivatives)

1. Derivative transactions to which hedge accounting is not applied

No items to report.

2. Derivative transactions to which hedge accounting is applied

Interest rate-related derivatives

As of March 31, 2018

Hedge accounting method	Type of derivative transaction	Main hedged items	Contract amount (Millions of yen)	Contract amount due after one year (Millions of yen)	Fair value (Millions of yen)
Short-cut method for interest rate swaps	Interest rate swaps: Payment on a floating interest rate/Receiving on a fixed interest rate	Long-term loans payable	1,062	929	(Note)
	Interest rate swaps: Payment on a floating interest rate/Receiving on a fixed interest rate	PFI and other projects finance loans	11,328	10,573	(Note)
Total			12,391	11,503	

(Note) Since interest rate swaps to which short-cut method is applied are accounted together with long-term loans payable and PFI and other project finance loans that are subject to hedging, their fair value is included in the fair value of such long-term loans payable and PFI and other project finance loans.

As of March 31, 2019

Hedge accounting method	Type of derivative transaction	Main hedged items	Contract amount (Millions of yen)	Contract amount due after one year (Millions of yen)	Fair value (Millions of yen)
Short-cut method for interest rate swaps	Interest rate swaps: Payment on a floating interest rate/Receiving on a fixed interest rate	Long-term loans payable	971	832	(Note)
	Interest rate swaps: Payment on a floating interest rate/Receiving on a fixed interest rate	PFI and other projects finance loans	10,571	9,806	(Note)
Total			11,543	10,638	

Hedge accounting method	Type of derivative transaction	Main hedged items	Contract amount (Thousands of U.S. dollars)	Contract amount due after one year (Thousands of U.S. dollars)	Fair value (Thousands of U.S. dollars)
Short-cut method for interest rate swaps	Interest rate swaps: Payment on a floating interest rate/Receiving on a fixed interest rate	Long-term loans payable	8,748	7,496	(Note)
	Interest rate swaps: Payment on a floating interest rate/Receiving on a fixed interest rate	PFI and other projects finance loans	95,242	88,350	(Note)
Total			104,000	95,846	

(Note) Since interest rate swaps to which short-cut method is applied are accounted together with long-term loans payable and PFI and other project finance loans that are subject to hedging, their fair value is included in the fair value of such long-term loans payable and PFI and other project finance loans.

(Retirement Benefits)

1. Overview of retirement benefit plans

The Company has lump-sum payment plans and a contract-type corporate pension plan as its defined benefit plan. In addition, the Company has a defined contribution pension plan. The Company has established a retirement benefit trust.

Certain overseas consolidated subsidiaries have a defined benefit or defined contribution plan.

Certain domestic consolidated subsidiary has The Smaller Enterprise Retirement Allowance Mutual Aid Scheme. In addition to such scheme, certain domestic consolidated subsidiary has a retirement benefit plan under which such subsidiary pays additional retirement benefits to employees who meet the prescribed requirements upon their retirement.

In certain cases, the Group may also pay additional retirement benefits that are not subject to any actuarial calculations.

2. Defined benefit plans

(1) The changes in the retirement benefit obligation are as follows:

	Fiscal year ended March 31, 2018 (Millions of yen)	Fiscal year ended March 31, 2019 (Millions of yen)	Fiscal year ended March 31, 2019 (Thousands of U.S. dollars)
Retirement benefit obligation at the beginning of the year	16,554	16,804	151,401
Service cost	730	736	6,631
Interest cost	151	154	1,387
Actuarial gain and loss	95	117	1,054
Retirement benefits paid	(705)	(636)	(5,730)
Other	(21)	(12)	(108)
Retirement benefit obligation at the end of the year	16,804	17,163	154,635

(2) The changes in plan assets are as follows:

	Fiscal year ended March 31, 2018 (Millions of yen)	Fiscal year ended March 31, 2019 (Millions of yen)	Fiscal year ended March 31, 2019 (Thousands of U.S. dollars)
Plan assets at fair value at the beginning of the year	11,960	12,331	111,100
Expected return on plan assets	139	146	1,315
Actuarial gain and loss	(56)	653	5,883
Contribution by the companies	586	1,036	9,334
Retirement benefits paid	(317)	(267)	(2,405)
Other	19	43	387
Plan assets at fair value at the end of the year	12,331	13,935	125,551

(3) The following table sets forth the funded status of the plans and the amounts recognized in the consolidated balance sheets as of March 31, 2018 and 2019 for the Company's and the consolidated subsidiaries' defined benefit plans:

	As of March 31, 2018 (Millions of yen)	As of March 31, 2019 (Millions of yen)	As of March 31, 2019 (Thousands of U.S. dollars)
Funded retirement benefit obligation	14,426	14,761	132,993
Plan assets at fair value	(12,331)	(13,935)	(125,551)
	2,094	826	7,442
Unfunded retirement benefit obligation	2,378	2,402	21,641
Net amount of liabilities and assets recognized in the consolidated balance sheet	4,473	3,228	29,083
Liability for retirement benefit	5,294	4,603	41,472
Assets for retirement benefits	821	1,374	12,379
Net amount of liabilities and assets recognized in the consolidated balance sheet	4,473	3,228	29,083

(4) The components of retirement benefit expenses are as follows:

	Fiscal year ended March 31, 2018 (Millions of yen)	Fiscal year ended March 31, 2019 (Millions of yen)	Fiscal year ended March 31, 2019 (Thousands of U.S. dollars)
Service cost	730	736	6,631
Interest cost	151	154	1,387
Expected return on plan assets	(139)	(146)	(1,315)
Amortization of actuarial gain or loss	668	648	5,838
Amortization of prior service cost	7	8	72
Other	(33)	(43)	(387)
Retirement benefit expenses	1,385	1,358	12,235

(5) The components of remeasurements of defined benefit plans included in other comprehensive income (before tax effect) are as follows:

	Fiscal year ended March 31, 2018 (Millions of yen)	Fiscal year ended March 31, 2019 (Millions of yen)	Fiscal year ended March 31, 2019 (Thousands of U.S. dollars)
Prior service cost	7	8	72
Actuarial gain and loss	516	1,184	10,667
Total	524	1,193	10,748

(6) The components of remeasurements of defined benefit plans included in accumulated other comprehensive income (before tax effect) are as follows:

	As of March 31, 2018 (Millions of yen)	As of March 31, 2019 (Millions of yen)	As of March 31, 2019 (Thousands of U.S. dollars)
Unrecognized prior service cost	25	16	144
Unrecognized actuarial gain and loss	3,540	2,355	21,218
Total	3,565	2,372	21,371

(7) The fair value of plan assets, by major category as a percentage of total plan assets are as follows:

	As of March 31, 2018	As of March 31, 2019
Stocks	37%	29%
Bonds	35	39
General accounts	22	20
Other	6	12
Total	100	100

(Note) Retirement benefit trust established for the corporate pension plans is included and equivalent to 8.7% of total amount of plan assets as of March 31, 2018 and 9.4% as of March 31, 2019.

The long-term expected rate of return on plan assets have been determined as a result of consideration of both the portfolio allocation at present and in the future, and long-term rates of return from multiple plan assets at present and in the future.

(8) The assumptions used in accounting for the defined benefit plans are as follows:

	Fiscal year ended March 31, 2018	Fiscal year ended March 31, 2019
Discount rates	0.5–1.2%	0.6–1.2%
Long-term expected rates of return on plan assets	Mainly 1.5	Mainly 1.5
Expected rates of salary increase	1.2–8.5	1.2–8.5

3. Defined contribution plans

Contributions of defined contribution plans for the fiscal years ended March 31, 2018 and 2019 were ¥140 million and ¥142 million (US$1,279 thousand), respectively.

(Income Taxes)

1. The significant components of deferred tax assets and deferred tax liabilities

	As of March 31, 2018 (Millions of yen)	As of March 31, 2019 (Millions of yen)	As of March 31, 2019 (Thousands of U.S. dollars)
Deferred tax assets:			
Enterprise tax payable	180	178	1,603
Accrued bonuses	873	824	7,424
Provision for loss on construction contracts	64	158	1,423
Provision for warranties for completed construction	209	367	3,306
Excess of depreciation	318	328	2,955
Liability for retirement benefit	2,154	1,849	16,659
Unused tax losses (Note 2)	148	187	1,684
Other	628	705	6,351
Subtotal	4,578	4,600	41,445
Valuation allowance for unused tax losses (Note 2)	—	(165)	(1,486)
Valuation allowance for the total amount of deductible temporary differences	—	(257)	(2,315)
Valuation allowance subtotal (Note 1)	(168)	(422)	(3,802)
Total deferred tax assets	4,410	4,177	37,634
Deferred tax liabilities:			
Gain on contribution of securities to retirement benefit trust	(691)	(727)	(6,550)
Other	(254)	(282)	(2,540)
Total deferred tax liabilities	(945)	(1,009)	(9,090)
Net deferred tax assets (liabilities)	3,465	3,168	28,543

(Notes)1. The valuation allowance has increased by ¥254 million (US$2,288 thousand). The increase mainly consists of the additional recognition of valuation allowance relating to the provision for loss on construction contracts in the amount of ¥107 million (US$964 thousand) at the Company and the valuation allowance for unused tax losses in the amount of ¥121 million (US$1,090 thousand) at a consolidated subsidiary, METAWATER USA, INC.

2. Amounts of unused tax losses and deferred tax assets by carryforward period

As of March 31, 2019

	One year or less (Millions of yen)	After one year through two years (Millions of yen)	After two years through three years (Millions of yen)	After three years through four years (Millions of yen)	After four years through five years (Millions of yen)	After five years (Millions of yen)	Total (Millions of yen)
Unused tax losses (a)	1	—	—	23	—	162	187
Valuation allowance	(1)	—	—	(2)	—	(161)	(165)
Deferred tax assets	—	—	—	21	—	1	22

	One year or less (Thousands of U.S. dollars)	After one year through two years (Thousands of U.S. dollars)	After two years through three years (Thousands of U.S. dollars)	After three years through four years (Thousands of U.S. dollars)	After four years through five years (Thousands of U.S. dollars)	After five years (Thousands of U.S. dollars)	Total (Thousands of U.S. dollars)
Unused tax losses (a)	9	—	—	207	—	1,459	1,684
Valuation allowance	(9)	—	—	(18)	—	(1,450)	(1,486)
Deferred tax assets	—	—	—	189	—	9	198

(a) Unused tax losses are multiplied by the effective statutory tax rate.

2. The breakdown of major items that caused differences between the effective statutory tax rate and the effective income tax rate

	As of March 31, 2018	As of March 31, 2019
Effective statutory tax rate	30.9%	30.6%
(Adjustment)		
Permanently non-deductible items such as entertainment expenses	3.8	4.0
Permanently non-taxable items such as dividends income	(0.1)	(0.1)
Per capita inhabitants' tax	1.0	0.9
Tax credit for experiment and research expenses	(2.1)	(3.0)
Reduction of deferred tax assets at end of period due to change in tax rates	2.1	—
Changes in valuation allowance	0.4	3.4
Difference in tax rates of overseas consolidated subsidiaries	0.0	(0.5)
Other	2.9	(3.2)
Effective income tax rate	38.9	32.1

(Asset Retirement Obligations)

The Group recognizes asset retirement obligations to restore corporate offices to their original condition upon termination of their lease contracts. However, the statement is omitted because the total amount of the asset retirement obligations is immaterial.

Regarding some of the obligation to restore corporate offices to their original condition, the Group estimate nonrecoverable amounts of deposits for those premises and record the portion attributable to the current year as expenses, instead of recording asset retirement obligations.

(Segment Information)

[Segment Information]

1. Outline of reportable segment

The Company's segments represent components of the Company for which separate financial information is available and that are subject to periodical review by the board of directors in determining how to allocate operating resources and evaluating performance.

The Company has established business divisions by its products and services at the corporate office, each of which operates under comprehensive domestic and overseas strategies developed for its products and services.

Therefore, the Group basically consists of two reportable segments: "Plant Engineering" and "Service Solutions", which are based on the Company's business divisions in consideration of similarities of types and natures of products and services. "Plant Engineering" segment is primarily involved in design and construction of water and sewage treatment plants. "Service Solutions" segment is primarily involved in operation, control and repair of water and sewage treatment plant facilities.

2. Determination of sales, income or loss, assets, liabilities and other items for each reportable segment

Accounting treatment applied to the business segment reported is generally consistent with accounting treatment stated in "Important Matters for Basis of Preparation of Consolidated Financial Statements".

In addition, segment income is determined based on operating income, which is consistent with operating income for the consolidated statement of income.

3. Sales, income or loss, assets, liabilities and other items by reportable segment

Fiscal year ended March 31, 2018

(Millions of yen)

	Reportable segments			Adjustments (Note)	Consolidated
	Plant Engineering Business	Service Solutions Business	Total		
Net sales					
Sales to third parties	64,965	45,930	110,895	—	110,895
Inter-segment sales and transfers	—	—	—	—	—
Net sales	64,965	45,930	110,895	—	110,895
Segment income	2,623	4,121	6,745	—	6,745
Segment assets	46,374	49,079	95,453	27,499	122,952
Other items					
Depreciation	862	578	1,441	—	1,441
Capital expenditures	582	174	757	—	757

(Note) The amount of corporate assets included in adjustments of segment assets is ¥27,499 million. The corporate assets mainly represent cash and deposits and investment securities.

Fiscal year ended March 31, 2019

(Millions of yen)

	Reportable segments			Adjustments (Note)	Consolidated
	Plant Engineering Business	Service Solutions Business	Total		
Net sales					
Sales to third parties	65,517	51,824	117,342	—	117,342
Inter-segment sales and transfers	—	—	—	—	—
Net sales	65,517	51,824	117,342	—	117,342
Segment income	3,191	4,416	7,607	—	7,607
Segment assets	56,158	46,512	102,671	29,949	132,620
Other items					
Depreciation	765	582	1,348	—	1,348
Capital expenditures	584	307	891	—	891

(Thousands of U.S. dollars)

	Reportable segments			Adjustments (Note)	Consolidated
	Plant Engineering Business	Service Solutions Business	Total		
Net sales					
Sales to third parties	590,296	466,924	1,057,230	—	1,057,230
Inter-segment transactions and transfers	—	—	—	—	—
Net sales	590,296	466,924	1,057,230	—	1,057,230
Segment income	28,750	39,787	68,537	—	68,537
Segment assets	505,973	419,064	925,047	269,835	1,194,882
Other items					
Depreciation	6,892	5,243	12,145	—	12,145
Capital expenditures	5,261	2,766	8,027	—	8,027

(Note) The amount of corporate assets included in adjustments of segment assets is ¥29,949 million (US$269,835 thousand). The corporate assets mainly represent cash and deposits and investment securities.

[Related Information]

Fiscal year ended March 31, 2018

1. Information by products and services

A description is omitted because similar information has been disclosed under segment information.

2. Information by region

(1) Net sales

A description is omitted because sales to third parties in Japan exceed 90% of net sales in the consolidated statement of income.

(2) Property, plant and equipment

(Millions of yen)

Japan	North America	Total
1,171	1,810	2,982

3. Information about major customers

(Millions of yen)

Name of customer	Net sales	Related business segment
TOKYO METROPOLITAN GOVERNMENT	17,256	Plant Engineering Business Service Solutions Business

Fiscal year ended March 31, 2019

1. Information by products and services

A description is omitted because similar information has been disclosed under segment information.

2. Information by region

(1) Net sales

A description is omitted because sales to third parties in Japan exceed 90% of net sales in the consolidated statement of income.

(2) Property, plant and equipment

(Millions of yen)

Japan	North America	Total
1,346	1,841	3,188

(Thousands of U.S. dollars)

Japan	North America	Total
12,127	16,587	28,723

3. Information about major customers

(Millions of yen)

Name of customer	Net sales	Related business segment
TOKYO METROPOLITAN GOVERNMENT	19,967	Plant Engineering Business Service Solutions Business

(Thousands of U.S. dollars)

Name of customer	Net sales	Related business segment
TOKYO METROPOLITAN GOVERNMENT	179,899	Plant Engineering Business Service Solutions Business

[Information about Impairment Loss on Non-current Assets by Reportable Segment]

Fiscal year ended March 31, 2018

No items to report.

Fiscal year ended March 31, 2019

No items to report.

[Information about Amortization and Unamortized Balance of Goodwill by Reportable Segment]

Fiscal year ended March 31, 2018

(Millions of yen)

	Reportable segments			Corporate/ Eliminations	Total
	Plant Engineering Business	Service Solutions Business	Total		
Amortization	140	—	140	—	140
Unamortized balance	1,842	—	1,842	—	1,842

Fiscal year ended March 31, 2019

(Millions of yen)

	Reportable segments			Corporate/ Eliminations	Total
	Plant Engineering Business	Service Solutions Business	Total		
Amortization	138	—	138	—	138
Unamortized balance	1,670	—	1,670	—	1,670

(Thousands of U.S. dollars)

	Reportable segments			Corporate/ Eliminations	Total
	Plant Engineering Business	Service Solutions Business	Total		
Amortization	1,243	—	1,243	—	1,243
Unamortized balance	15,046	—	15,046	—	15,046

[Information about Gain on Bargain Purchase by Reportable Segment]

Fiscal year ended March 31, 2018

No items to report.

Fiscal year ended March 31, 2019

No items to report.

(Related Party Information)

Fiscal year ended March 31, 2018

1. Business transactions with related parties

(1)Business transactions between the company filing the consolidated financial statements and related parties

Unconsolidated subsidiaries and affiliated companies of the company filing the consolidated financial statements

Category	Related party	Address	Capital stock or contributions (Millions of yen)	Type of business	Percentage of voting rights holding (held) (%)	Relationship	Nature of transaction	Transaction amount (Millions of yen)	Account title	Balance at the end of year (Millions of yen)
Other affiliate	FUJI ELECTRIC CO., LTD.	Kawasaki -ku, Kawasaki -shi	47,586	Development, manufacture, and sale of products related to power electronics systems, electric generation, electronic devices and food distribution, and provision of services related thereto	(Held) Direct 28.9	Purchase of products	Purchase of products (Note 1, 2)	9,209	Accounts payable - trade	3,846
Subsidiary of other affiliate	FUJI FURUKAWA ENGINEERING & CONSTRUCTION CO. LTD.	Saiwai-ku, Kawasaki -shi	1,970	Design and execution of construction of plant facilities, air conditioning/ electricity/building/incidental facilities, and telecommunications	—	Entrustment of the Company's construction contracts Concurrent holding of positions by officers	Entrustment of construction contracts (Note 1, 2)	4,636	Accounts payable - trade	1,491
Subsidiary of other affiliate	Hokkaido Fuji Electric Co., Ltd.	Chuo-ku, Sapporo-shi	100	Sale, installation, and repair of electrical machinery and apparatus/control systems and electronic components	—	Acceptance of construction contracts of said company	Acceptance of construction contracts (Note 1, 2)	1,143	Accounts receivable - trade	1,145

(Notes) 1. Of the amounts stated above, the transaction amount excludes consumption taxes, while the balance at end of the fiscal year includes consumption taxes.

2. Transaction terms and the policy to determine transaction terms

Transaction terms such as prices are determined through negotiation in each case based on a quotation as is the case with general transactions, as well as by reference to actual situation of the market.

(2)Business transactions between consolidated subsidiaries of the company filing the consolidated financial statements and related parties

No items to report.

2. Note concerning the parent company or significant affiliated companies

No items to report.

Fiscal year ended March 31, 2019

1. Business transactions with related parties

(1)Business transactions between the company filing the consolidated financial statements and related parties

Unconsolidated subsidiaries and affiliated companies of the company filing the consolidated financial statements

Category	Related party	Address	Capital stock or contributions (Millions of yen)	Type of business	Percentage of voting rights holding (held) (%)	Relationship	Nature of transaction	Transaction amount (Millions of yen)	Account title	Balance at the end of year (Millions of yen)
Other affiliate	NGK INSULATORS, LTD.	Mizuho-ku, Nagoya-shi	69,849 (US$629,326 thousand)	Development, manufacture, and sale of products related to electric power, ceramics, electronics, and process technology, and provision of services related thereto	(Held) Direct 28.9	Purchase of products Concurrent holding of positions by officers	Purchase of products (Note 1, 2)	1,590 (US$14,325 thousand)	Accounts payable - trade	1,258 (US$11,334 thousand)
Other affiliate	FUJI ELECTRIC CO., LTD.	Kawasaki -ku, Kawasaki -shi	47,586 (US$428,741 thousand)	Development, manufacture, and sale of products related to power electronics systems, electric generation, electronic devices and food distribution, and provision of services related thereto	(Held) Direct 28.9	Purchase of products	Purchase of products (Note 1, 2)	7,268 (US$65,483 thousand)	Accounts payable - trade	2,786 (US$25,101 thousand)
Subsidiary of other affiliate	FUJI FURUKAWA ENGINEERING & CONSTRUCTION CO. LTD.	Saiwai-ku, Kawasaki -shi	1,970 (US$17,749 thousand)	Design and execution of construction of plant facilities, air conditioning/ electricity/building/incidental facilities, and telecommunications	—	Entrustment of the Company's construction contracts	Entrustment of construction contracts (Note 1, 2)	5,048 (US$45,481 thousand)	Accounts payable - trade	1,221 (US$11,000 thousand)
Subsidiary of other affiliate	Hokkaido Fuji Electric Co., Ltd.	Chuo-ku, Sapporo-shi	100 (US$900 thousand)	Sale, installation, and repair of electrical machinery and apparatus/control systems and electronic components	—	Acceptance of construction contracts of said company	Acceptance of construction contracts (Note 1, 2)	858 (US$7,730 thousand)	Accounts receivable - trade	831 (US$7,487 thousand)

(Notes) 1. Of the amounts stated above, the transaction amount excludes consumption taxes, while the balance at end of the fiscal year includes consumption taxes.

2. Transaction terms and the policy to determine transaction terms
Transaction terms such as prices are determined through negotiation in each case based on a quotation as is the case with general transactions, as well as by reference to actual situation of the market.

(2)Business transactions between consolidated subsidiaries of the company filing the consolidated financial statements and related parties

No items to report.

2. Note concerning the parent company or significant affiliated companies

No items to report.

(Per Share Information)

	Fiscal year ended March 31, 2018 (Yen)	Fiscal year ended March 31, 2019 (Yen)	Fiscal year ended March 31, 2019 (U.S. dollars)
Net assets per share	2,118.02	2,271.67	20.46
Net income per share	151.65	199.46	1.79

(Notes) 1. Diluted net income per share is not presented as there are no diluted shares.

2. Net income per share is calculated on the following basis.

	Fiscal year ended March 31, 2018 (Millions of yen)	Fiscal year ended March 31, 2019 (Millions of yen)	Fiscal year ended March 31, 2019 (Thousands of U.S. dollars)
Net income per share			
Profit attributable to owners of parent	3,931	5,170	46,580
Profit not attributable to common shareholders	—	—	—
Profit attributable to owners of parent related to common stock	3,931	5,170	46,580
Average number of shares outstanding during the period (number of shares)	25,923,452	25,923,379	25,923,379

3. Net assets per share are calculated on the following basis.

	Fiscal year ended March 31, 2018 (Millions of yen)	Fiscal year ended March 31, 2019 (Millions of yen)	Fiscal year ended March 31, 2019 (Thousands of U.S. dollars)
Total net assets	55,042	59,031	531,858
Deduction from total net assets	136	142	1,279
(Non-controlling interests included in the above)	(136)	(142)	(1,279)
Net assets attributable to shares of common stock	54,906	58,889	530,579
Number of common stock used for calculation of net assets per share (number of shares)	25,923,409	25,923,350	25,923,350

(Significant Subsequent Event)

No items to report.

5. [Supplementary Schedules]

[Schedule of Bonds]

No items to report.

[Schedule of Loans]

Category	Balance as of April 1, 2018 (Millions of yen)	Balance as of March 31, 2019 (Millions of yen)	Balance as of April 1, 2018 (Thousands of U.S. dollars)	Balance as of March 31, 2019 (Thousands of U.S. dollars)	Average interest rate (%)	Due date
Short-term loans payable	269	337	2,423	3,036	3.76	—
Current portion of PFI and other project finance loans	833	844	7,505	7,604	1.06	—
Long-term loans payable	2,050	1,847	18,470	16,641	3.23	April 25, 2022 to January 14, 2026
PFI and other projects finance loans	11,549	10,705	104,054	96,450	1.16	June 22, 2026 to November 30, 2033
Total	14,703	13,733	132,471	123,731	—	—

(Notes) 1. "Average interest rate" is stated at weighted average interest rate on the balance of loans payable at the end of the fiscal year.

2. Repayment schedule for long-term loans payable and PFI and other project finance loans (excluding current portion) per year for five years subsequent to the consolidated balance sheet date

Category	Due after one year through two years (Millions of yen)	Due after two years through three years (Millions of yen)	Due after three years through four years (Millions of yen)	Due after four years through five years (Millions of yen)
Long-term loans payable	281	281	451	277
PFI and other projects finance loans	855	862	873	885

Category	Due after one year through two years (Thousands of U.S. dollars)	Due after two years through three years (Thousands of U.S. dollars)	Due after three years through four years (Thousands of U.S. dollars)	Due after four years through five years (Thousands of U.S. dollars)
Long-term loans payable	2,531	2,531	4,063	2,495
PFI and other projects finance loans	7,703	7,766	7,865	7,973

[Schedule of Asset Retirement Obligations]

No items to report.

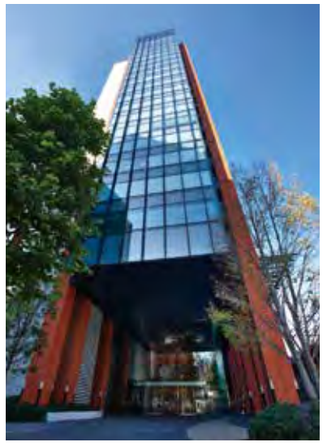
(1) The Company's consolidated financial statements are prepared based on "Ordinance on Terminology, Forms, and Preparation Methods of Consolidated Financial Statements" (Ordinance of the Ministry of Finance No. 28 of 1976).

(2) The Company's non-consolidated financial statements are prepared based on "Ordinance on the Terminology, Forms, and Preparation Methods of Non-consolidated Financial Statements, etc." (Ordinance of the Ministry of Finance No. 59 of 1963; hereinafter "Ordinance on Non-consolidated Financial Statements, etc.")
The Company falls under a company submitting special financial statements, and therefore prepares its non-consolidated financial statements pursuant to the provisions of Article 127 of Ordinance on Non-consolidated Financial Statements, etc.

(3) The Company is carrying out special initiatives to ensure the appropriateness of its consolidated financial statements, etc. Specifically, we have joined the Financial Accounting Standards Foundation and participate in trainings organized by audit firms, etc., in order to develop a system to accurately grasp the content of accounting standards, etc., and appropriately respond to changes in accounting standards, etc.

Corporate Information

Corporate Overview

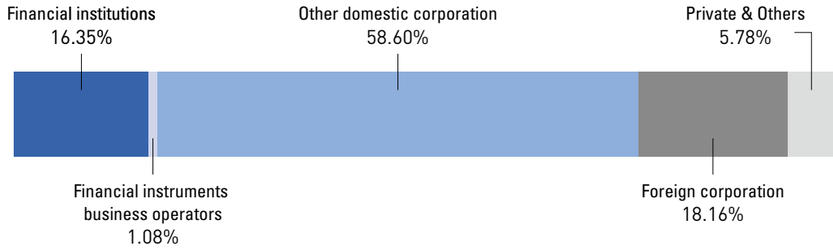


Company Name	METAWATER Co., Ltd.
English Name	METAWATER Co., Ltd.
Main Business Activities	Design and construction of equipment for water treatment plants, sewage treatment plants, and waste treatment facilities; design, manufacture, and sale of various devices; implementation of repair work; provision of services including operation management.
Construction Industry Qualifications	Civil engineering work, building work, electrical work, plumbing work, tile, brick and block work, machine and equipment installation work, telecommunication work, water and sewage facilities work, sanitation facilities work.
Establishment	April 1, 2008
Chairman and Representative Director	Yasushi Nakamura
Number of employee	2,977 *As of March 31, 2019, consolidated
List of bases	Head Office: JR Kanda Manseibashi Bldg., 1-25 Kandasuda-cho, Chiyoda-ku, Tokyo 101-0041 TEL:+81-(0)3-6853-7300 Hino Branch: 3-1-30 Asahigaoka, Hino, Tokyo 191-0065 TEL:+81-(0)42-589-6900 Nagoya Branch: Nagoya Prime Central Tower, 2-27-8 Meieki, Nishi-ku, Nagoya, Aichi 451-0045 TEL:+81-(0)52-884-6800
Main sales bases	Tokyo (Headquarters), Sapporo, Sendai, Yokohama, Nagoya, Osaka, Hiroshima, Takamatsu, Fukuoka
R&D Centers	Handa (Aichi), Ichihara (Chiba), Chiyoda-ku (Tokyo)
Main group companies	METAWATER SERVICES Co., Ltd.* METAWATER USA, INC.* Aqua-Aerobic Systems, Inc.* Mecana Umwelttechnik GmbH* METAWATER TECH Co., Ltd. SIC Co., Ltd. Toriden-Shoji Co. Akebono Engineering Co. Water Next Yokohama Co., Ltd.* Techno Clean Hokuso Co.* Aqua Service Aichi Co.* *: Scope of consolidated statement
Overseas bases	USA, Netherlands, Vietnam, Cambodia, Singapore

Stock-related matters *As of March 31, 2019

Stock Exchange listing	First section of the Tokyo Stock Exchange Industrial Classification : Electric Power and Gas. (code: 9551)
Total number of authorized shares	70,000,000 shares
Total number of issued shares	25,923,500 shares
Number of shareholders	4,291

Breakdown of shareholders

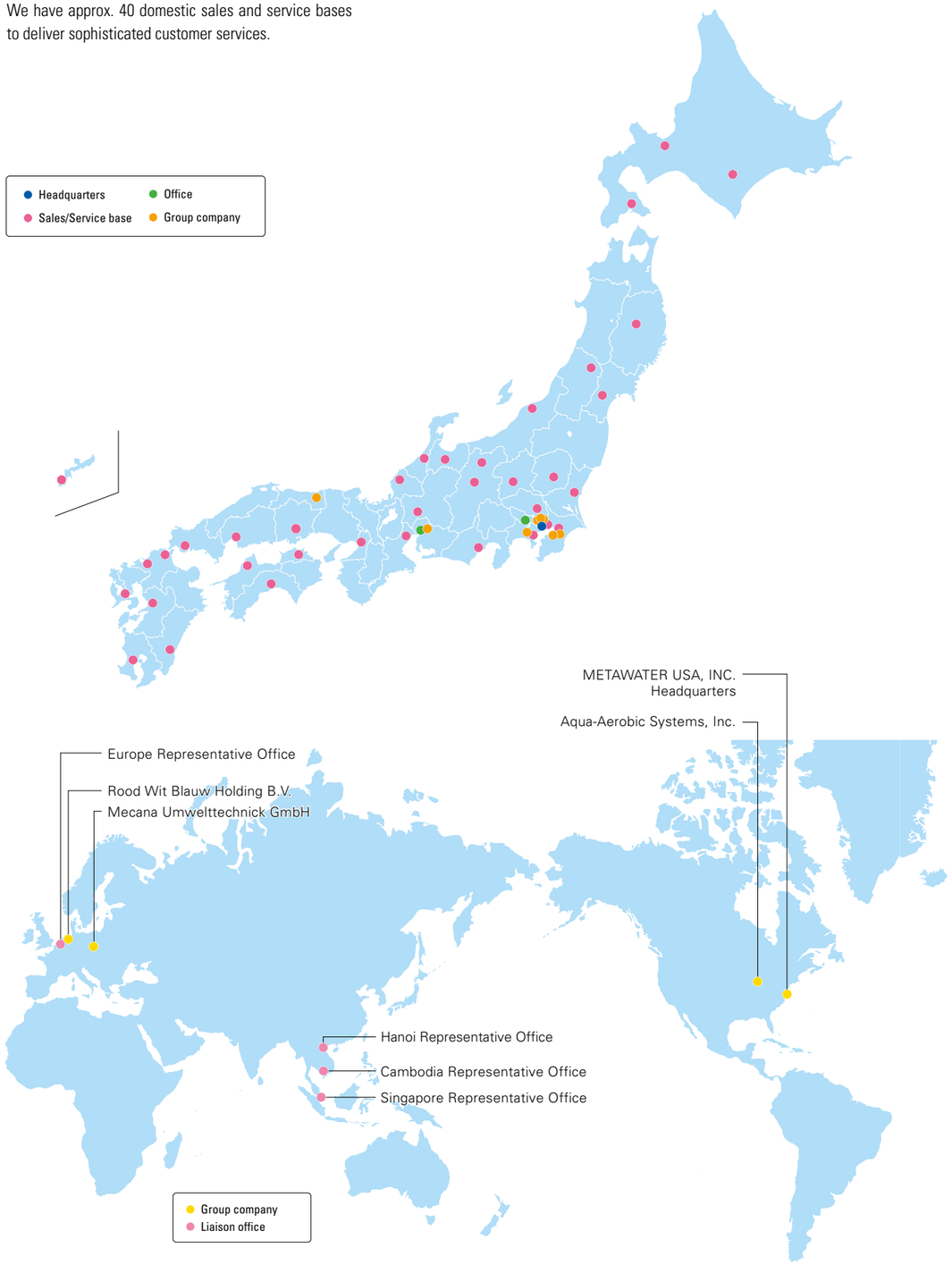


Status of dominant shareholders (Top 10)

Name of shareholder	Number of shares owned (1,000 shares)	Percentage of shares owned (%)
NGK INSULATORS, LTD.	7,500	28.93
Fuji Electric Co., Ltd.	7,500	28.93
The Master Trust Bank of Japan, Ltd. (Trust account)	1,408	5.43
Japan Trustee Services Bank, Ltd. (Trust account)	917	3.53
JP MORGAN CHASE BANK 385632	860	3.31
GOVERNMENT OF NORWAY	627	2.41
Japan Trustee Services Bank, Ltd. (Trust account 9)	626	2.41
The Nomura Trust and Banking Co., Ltd. (Trust account)	437	1.68
MSIP CLIENT SECURITIES	268	1.03
GOLDMAN SACHS INTERNATIONAL	210	0.81

Map of bases as of March 31, 2019

We have approx. 40 domestic sales and service bases to deliver sophisticated customer services.



"META" in the corporate name "METAWATER" is a prefix representing "transcendence" or "transformation."
It symbolizes our desire to be a company that evolves continuously to hand down "WATER," an indispensable resource, to people in the future generations.

The line vertically intersecting the logo in the center represents the role of METAWATER and its advanced technologies and products.
The deep blue on the left symbolizes "water before purification" and the clear blue on the right represents "water after purification and regeneration."

Corporate Characters

To symbolize our corporate identities, we have mascot characters called "Mae-chan" and "Tah-kun."
The synergetic growth of "Mae-chan," representing natural water, and "Tah-kun," representing purified water, symbolizes the growth and symbiosis of METAWATER with the environment.

Issuing the "METAWATER REPORT 2019"

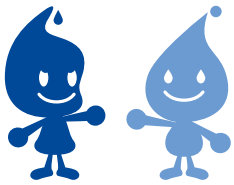
As a good partner of the water supply and sewage industry, METAWATER Group contributes to the sustainability of the water supply and sewage systems in cooperation with the local community. Further, METAWATER is proactively engaged in social contribution activities including environmental preservation as a corporate citizen to realize a sustainable society and preserve the global environment. We have issued this report to communicate the entire picture of our group in an easy-to-understand manner. Besides our corporate mission and business details, it offers comprehensive and concise information about our activities including the following: Financial information such as changes in performance and mid-term management plan for water management business in future; and CSR activities not listed in the financial statements and non-financial information such as social contribution activities as a part of CSR activities.

• Period in the scope of reporting

The performance for FY2018 (fiscal year ending March 2019) is the main scope for this report. However, some events in this report may have occurred before or after this period.

• Reference guidelines

- ISO26000 (International Standard of Social Responsibility issued in November 2010)
- Ministry of Environment: Environmental Reporting Guidelines (Version 2018)
- International Integrated Reporting Council (IIRC): International Integrated Reporting Frameworks
- GRI Sustainability Reporting Guideline Version 3.1 (G3.1), Version 4 (G4)
- United Nations Global Compact



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