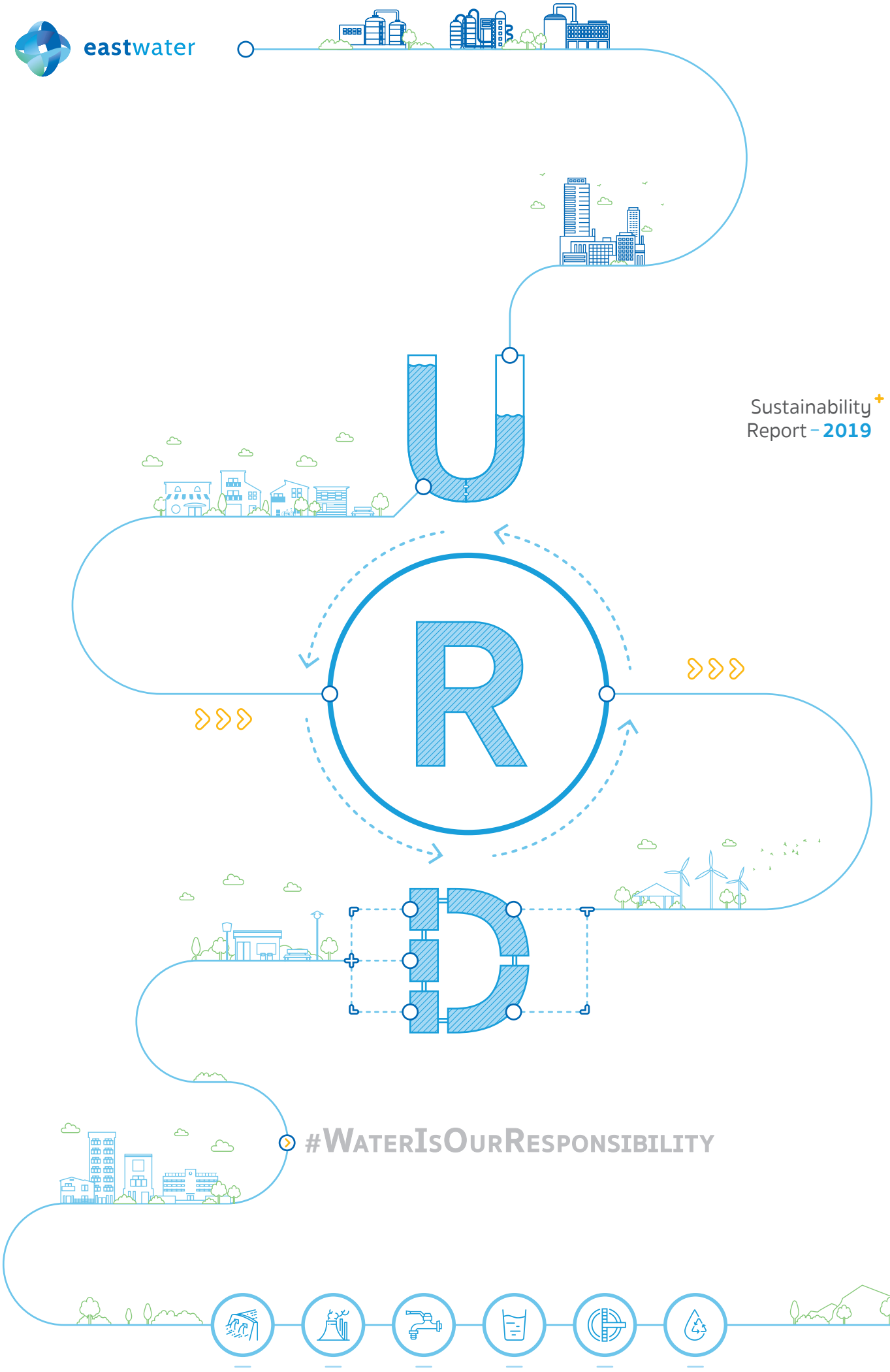
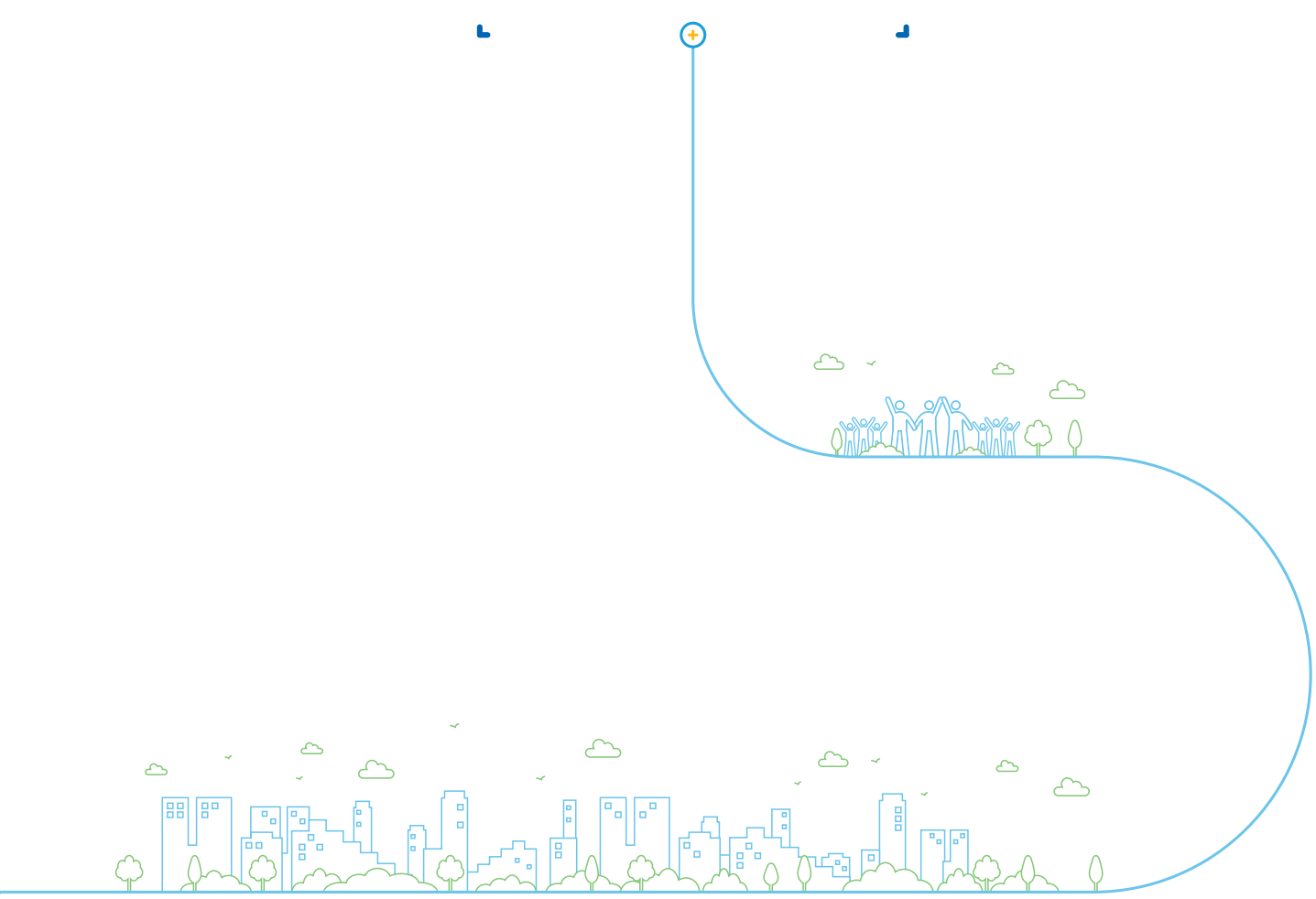
eastwater



Sustainability Report – 2019

#WaterIsOurResponsibility

URD



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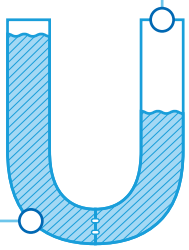
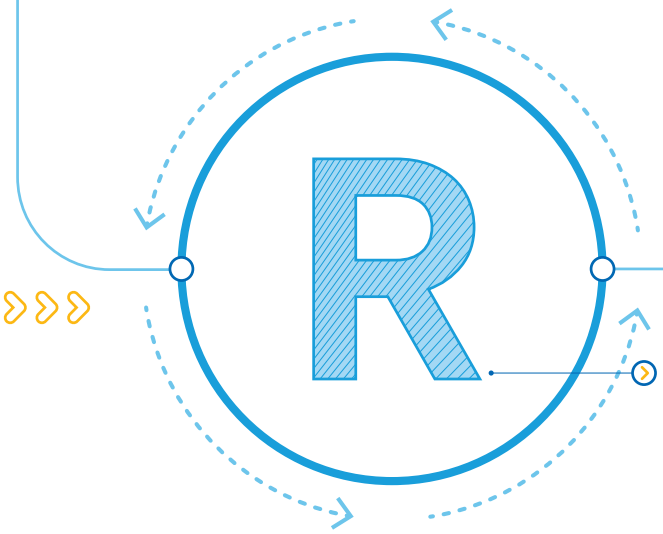


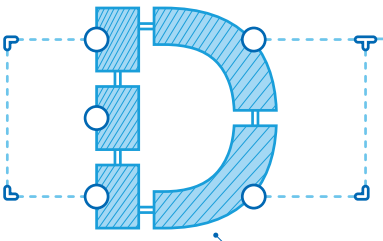
USEFUL

To make best use of water to promote sustainable water usage



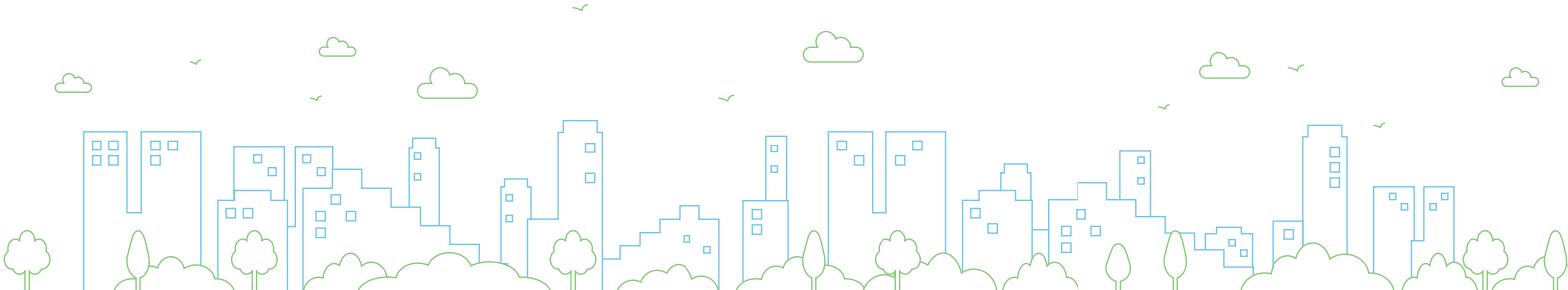
RESERVE

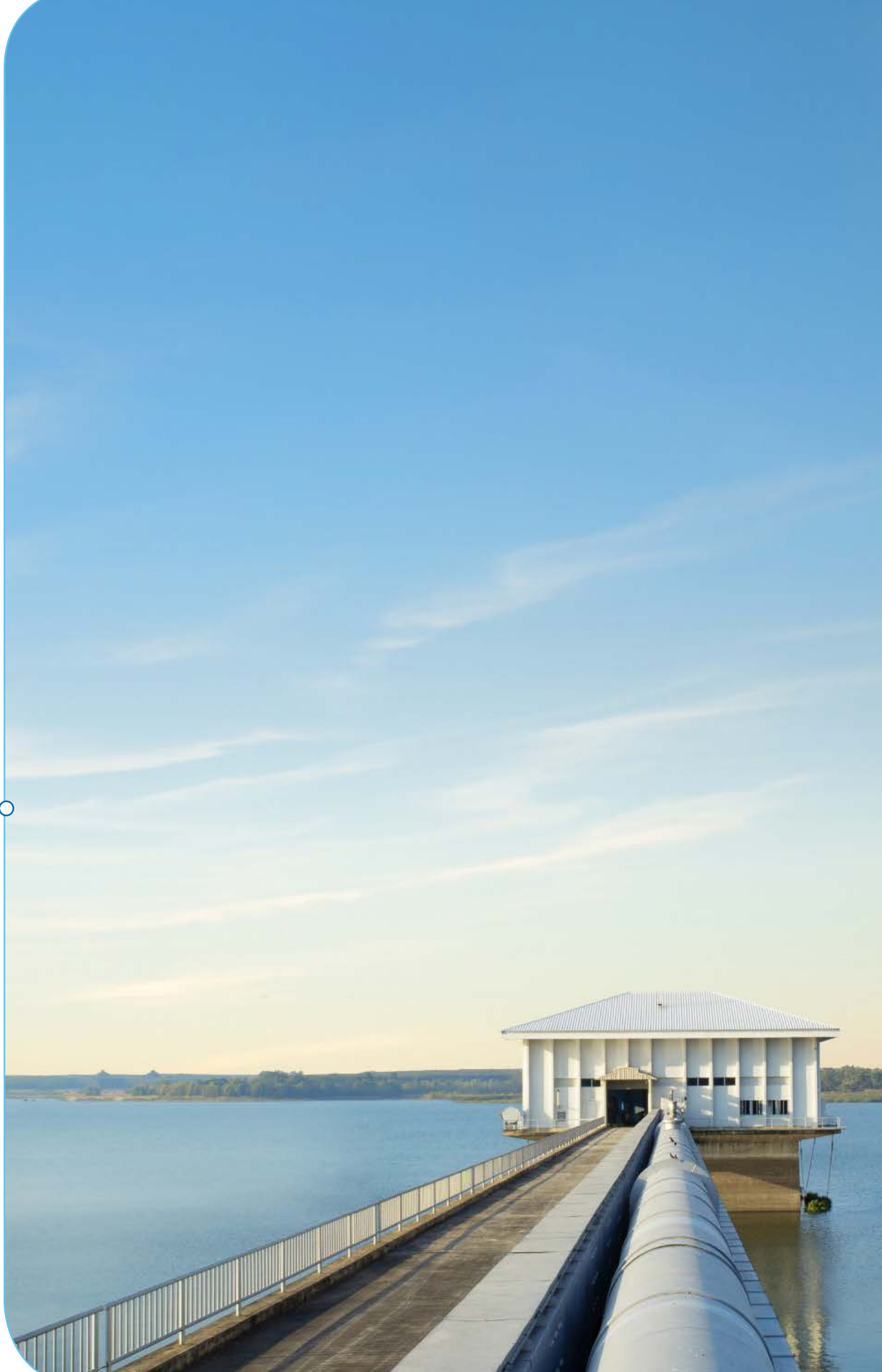
To allocate and reserve water resources to ensure self-reliance and sufficiency



DETECT

To detect and observe one's own water usage behaviors consistently





Vision

for Sustainable Growth

"To be **the leader** in total water solution of the country"

Missions

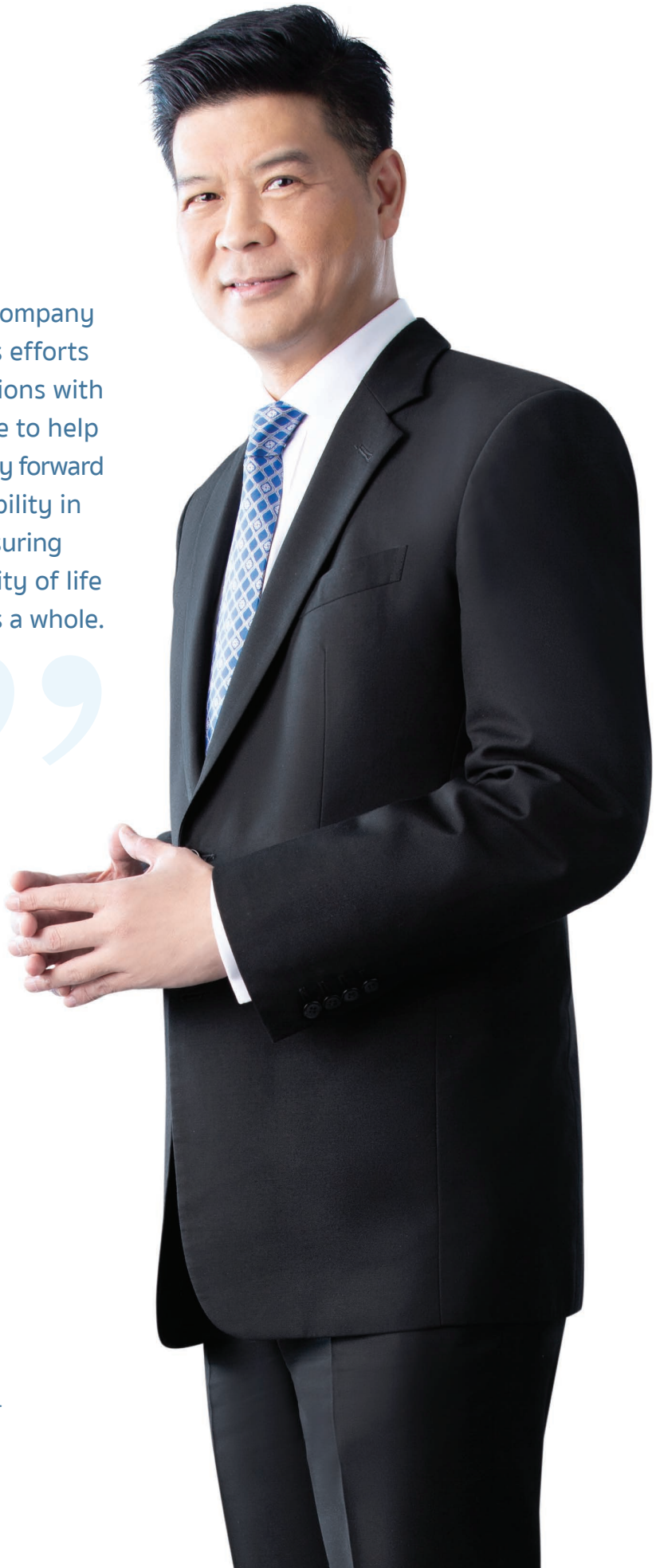
towards stakeholders

1. To develop the security and maintain stability of water supply in response to the long-term water demand
2. To expand the investment in water related business for continuous and sustainable growth
3. To increase competitive advantages through technologies and innovations
4. To develop human resources and improve management efficiency
5. To be socially and environmentally responsible and establish good relationships with all stakeholders in accordance with corporate governance principles

Core Values (Disclosure 102-16)

S	H	A	R	P
Stakeholder Focus	Holistic Thinking	Adaptability	Result Acceleration	Proactive & Creative Thinking

Content



For the way ahead, the Company will continue to focus its efforts on managing water solutions with its capacity and expertise to help propel the national economy forward and promote water stability in the long run while ensuring the uncompromising quality of life and social environment as a whole.

Mr. Jirayut Rungsrithong
President & Chief Executive Officer

Message from the President and Chief Executive Officer

(Disclosure 102-14)

Currently, the world is facing several environmental problems, including climate change and increasingly severe natural disasters. The impacts from those events were caused by humans' behaviors and ignorance of consequences from direct and indirect forms of environmental destruction, such as green zone destruction, Greenhouse gases (GHG) releases, wastewater or chemical substance discharges, and a myriad of other activities with environmental effects, especially on water resources.

We believe that **"Water"** is one of the basic necessities in conducting our lives and one of the key drivers of the Thai economy. Although water resources are unlimited, lack of proper management and attention paid to water quality would soon lead to the emergence of water crisis with impacts on overall water management. Thus, in 2019, the Company put in place a number of measures to tackle water shortages, such as water pumping system performance enhancement in its operational sites and raw water preparation from additional private ponds.

With the Company's extensive experience in systematic water management through the integration of a number of major water sources in the eastern region via its water pipeline network, the water demand of all sectors in the eastern region was met. With the strong commitment to developing its services, the Company continues to provide total water solution services, including raw water, industrial water, tap water, drinking water, wastewater treatment, and recycled water management, with a view to transforming water management of the industry and the household consumption sectors to achieve greater efficiency. The Company's commitment also contributes to more energy saving, less non-revenue water loss, and less system maintenance costs, with more eco-friendliness and sustainable economic and social value. The Company is ready to grow together with the country's economy under its vision of **"To be the leader in total water solution of the country."**

In 2019, the Company remained strongly determined to personnel development efforts to achieve required expertise through trainings, business restructurings, corporate culture cultivation, and adoption of advanced technologies and innovations in doing business. The Company improved its internal database efficiency to facilitate employees' operations to be faster and more convenient in parallel with tightening information security measures. The Company created and developed ideas to invite all sectors to take part in protecting water resources under a program called **"Sakit Thai, Sai Jai Nam"** (Water is our responsibility.) The program concept is designed to be a practical guideline for all parties to apply in daily lives, including householders, farmers, and industrial operators. The program is aimed at changing water consumption behaviors so as to create a balance in water uses as a strategy for sustainable water usage.

The Company's economic, social and environmental performance to improve the overall wellbeing of the communities and society has earned wide recognition and trust from its stakeholders. As such, the Company received a number of prestigious awards, such as an "Excellent" rating from the Corporate Governance Report of Thai Listed Company (CGR) assessment, the Rising Star Sustainability Awards in the category of Sustainability Excellence, and a gold medal for "The Happy Retirement Company Program" to encourage employees to have a good quality of life after retirement. Those accolades reflected the strong commitment and dedication of the directors, executives and employees of the Company in creating value and bringing society to wards sustainability.

For the way ahead, the Company will continue to focus its efforts on managing water solutions with its capacity and expertise to help propel the national economy forward and promote water stability in the long run while ensuring the uncompromising quality of life and social environment as a whole.

East Water Open House

East Water – Professional Expert in Total Water Solution Services through Water Pipeline Network System

(Disclosure 102-1)

Eastern Water Resources Development and Management Public Company Limited (East Water)

Ticker symbol:

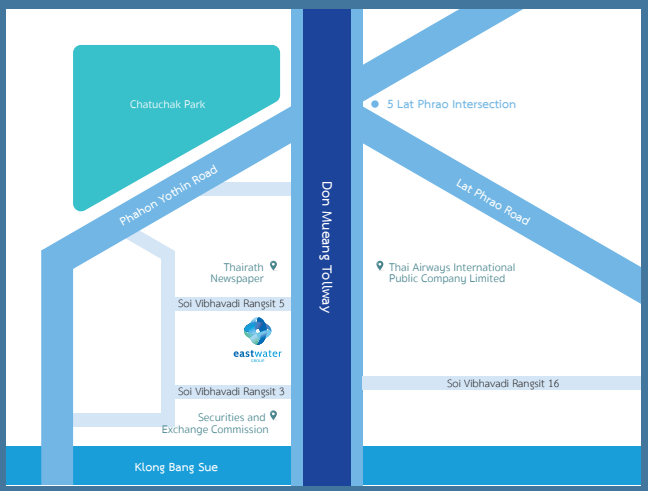
EASTW

Registered capital:

Baht **1,663.73** million

The Company is a provider of total water management solutions services which include:
(Disclosure 102-2)

- **Raw water** Supply of raw water sources, investment in water pipeline network installation, and raw water management to accommodate annual consumption demand.
- **Industrial water** Installation of industrial water production system and control the quality of water distributed, such as clarified water, reverse osmosis water, demineralized water, and reverse osmosis seawater, according to the water users in each industry.
- **Tap water** This business is operated through Universal Utilities PCL. which is a provider of tap water system management, both for surface water system and the system of water production from seawater. Advanced technologies are fully integrated into the production system, maintenance, tap water distribution system, and other engineering services.
- **Drinking water** Supply of clean and safe alkaline drinking water.
- **Wastewater treatment** Installation of wastewater management systems, such as activated sludge system and membrane bioreactor system, that match the needs of each industry and quality control of discharged wastewater.
- **Recycled water** Installation of water recycling system to generate recycled water for the industrial sector.



Head Office (Disclosure 102-3, 102-4)

- **Eastern Water Resources Development and Management Public Company Limited**
  East Water Building, 1 Vipavadeerangsit 5, Vipavadeerangsit Road, Jomphol, Jatujak, Bangkok 10900 (Thailand)
- **Universal Utilities Public Company Limited**
  East Water Building, 1 Vipavadeerangsit 5, Vipavadeerangsit Road, Jomphol, Jatujak, Bangkok 10900 (Thailand)

Business Structure of the East Water Group

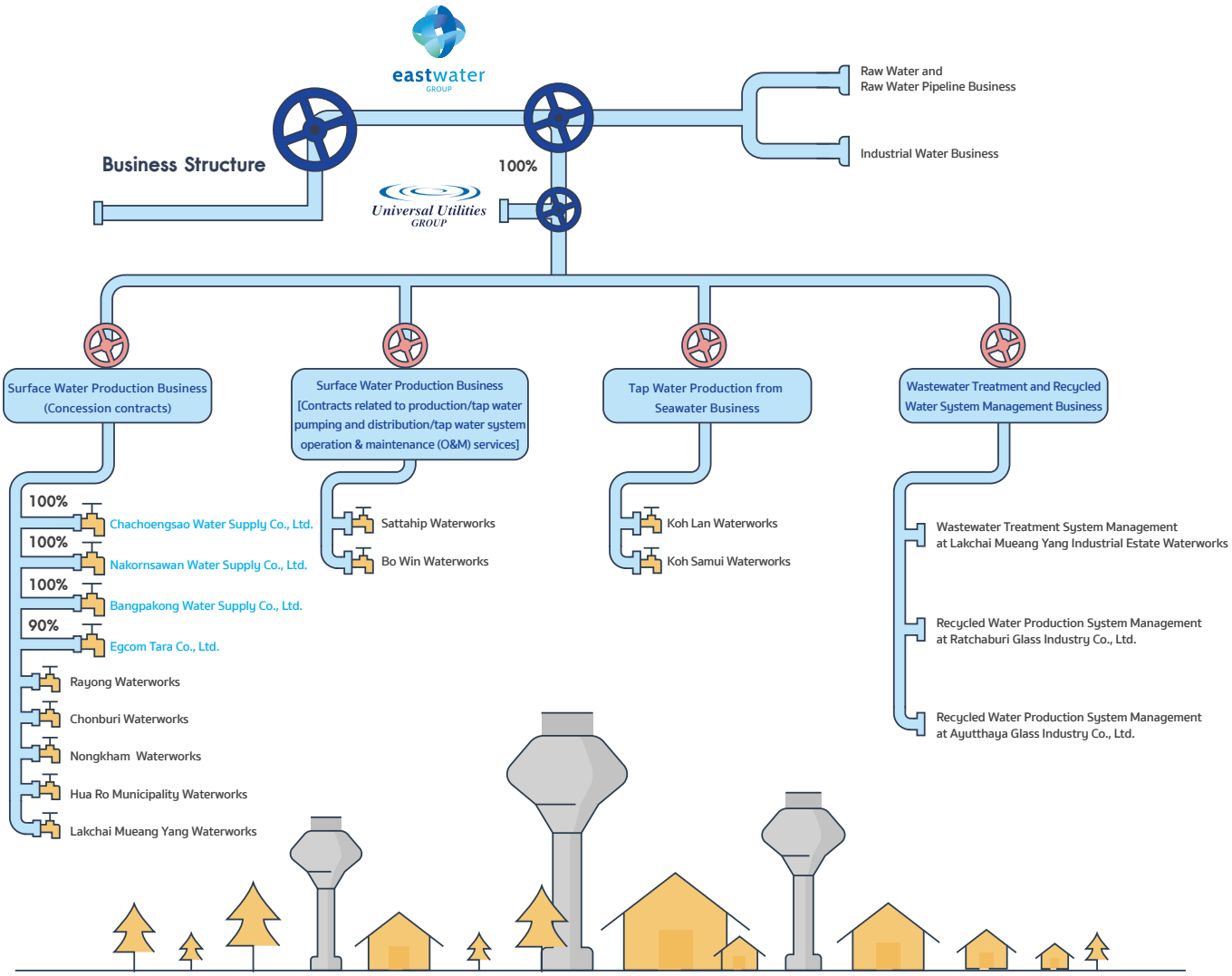
(Disclosure 102-5)

The Company is mainly engaged in the provision of total water solution services while Universal Utilities PCL. (UU), the Company's subsidiary, principally operates the tap water supply business and total wastewater management solution services. The business goals are to enable people to have comprehensive access to tap water for consumption and to raise the quality of life and the wellbeing of the people. Currently, Universal Utilities PCL. has a total of 4 subsidiaries as follows:

- Nakornsawan Water Supply Co., Ltd. (100% shareholding)
- Bangpakong Water Supply Co., Ltd. (100% shareholding)
- Chachoengsao Water Supply Co., Ltd. (100% shareholding)
- Egcom Tara Co., Ltd. (90% shareholding)

The business group's diversified forms of contracts and services can be classified as follows:

1. Surface Tap Water Production Business: Long-term concession contracts from government and private agencies
2. Surface Tap Water Production Business: Contracts related to production/tap water pumping and distribution/tap water system operation & maintenance (O&M) services
3. Tap Water Production from Seawater Business
4. Wastewater Treatment and Recycled Water System Management Business



Operating Sites

(Disclosure 102-6)

Raw Water and Raw Water Pipeline Business:
Eastern Water Resources Development and Management PCL. provides services relating to supply of raw water sources, investment in water pipeline network installation, and raw water management to accommodate annual consumption demand.
Province: Chachoengsao, Chonburi, and Rayong

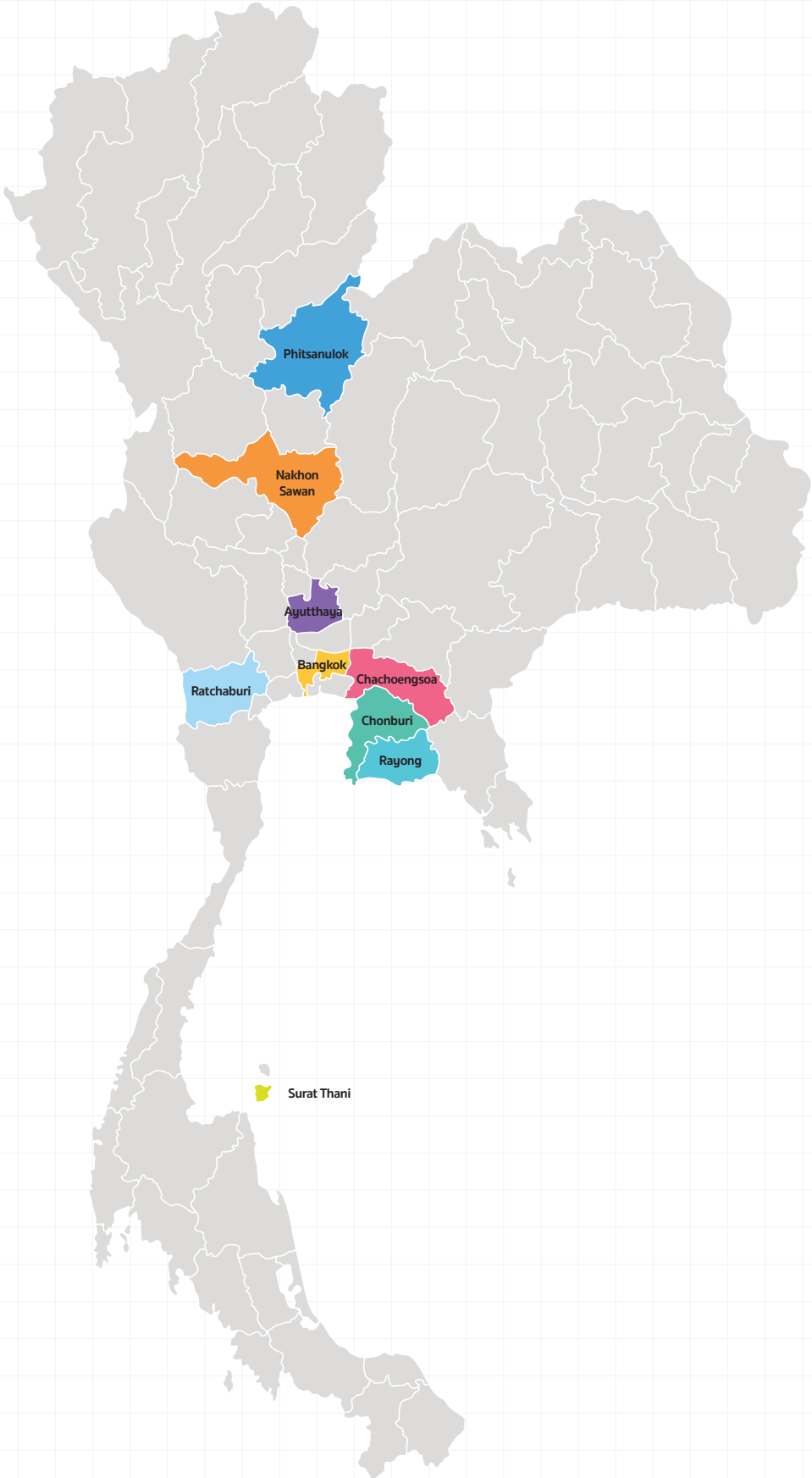
Industrial Water Business:
Eastern Water Resources Development and Management PCL. provides services relating to installation of industrial water production system and control the quality of water distributed such as clarified water, reverse osmosis water, demineralized water, and reverse osmosis seawater, according to the water users in each industry.
Province: Rayong

Surface Tap Water Production Business with long-term concession contracts from government and private agencies:
Universal Utilities PCL. is a provider of surface tap water production system management services with advanced technologies fully integrated into the production system, maintenance, tap water distribution system, and other engineering services.
Province: Phitsanulok, Nakornsawan, Ratchaburi
Chachoengsao, Chonburi, and Rayong

Surface Tap Water Production Business with contracts related to production/tap water pumping and distribution/tap water system operation & maintenance (O&M) services:
Universal Utilities PCL. is a provider of surface tap water production system management services with advanced technologies fully integrated into the production system, maintenance, tap water distribution system, and other engineering services.
Province: Chonburi

Tap Water Production from Seawater Business:
Universal Utilities PCL. is a provider of seawater tap water production system management services with advanced technologies fully integrated into the production system, maintenance, tap water distribution system, and other engineering services.
Province: Chonburi and Surat Thani

Wastewater Treatment and Recycled Water System Management Business:
Universal Utilities PCL. is a provider of wastewater treatment system installation services according to business needs, such as activated sludge system and membrane bioreactor system, with quality control of discharged wastewater for reuse in industrial systems.
Province: Ratchaburi, Ayutthaya, and Rayong



"EASTW" Shareholders

(Disclosure 102-5)

The top 10 major shareholders of EASTW as at the book-closing date of 30 December 2019 were as follows:

Rank	Shareholders' Name	Number of Shares	Proportion (%)
1	Provincial Waterworks Authority	668,800,000	40.20
2	Manila Water (Thailand) Company Limited	311,443,190	18.72
3	Industrial Estate Authority of Thailand	76,000,000	4.57
4	Mr. Min Tieanworn	33,000,000	1.98
5	Thai NVDR Company Limited	31,821,325	1.91
6	BNP Paribas Securities Services, London Branch	28,550,300	1.72
7	Aberdeen Standard Growth Fund	24,320,600	1.46
8	Aberdeen Standard Long-Term Equity Fund	24,260,200	1.46
9	Aberdeen Standard Small Cap Fund	22,709,200	1.36
10	Thanachart Prime Low Beta Fund	20,784,400	1.25
	Other shareholders	422,035,934	25.37
	Total	**1,663,725,149**	**100.00**

Source : Thailand Securities Depository Company Limited

Remark: The first and the third shareholders were the major shareholders from the government sector while the second shareholder was a juristic person. All these 3 shareholders had a role in determining management policies and their representatives were proposed for appointment as directors at the Company's shareholders' meeting.

Supply Chain Management

(Disclosure 102-9, 102-10)

In 2018, the Company expanded its business into the "total water solutions" service sector covering raw water, industrial water, tap water, drinking water, wastewater treatment, and recycled water management in its operational sites (Chachoengsao, Chonburi, and Rayong) as well as the eastern areas being part of the Eastern Economic Corridor (EEC) Development Project. Thus, the Company reviewed its main work processes to ensure alignment with its businesses by adopting the Life Cycle Assessment (LCA) approach to provide analysis guidelines covering the whole life cycle of a product, encompassing material procurement, production, usage, in-process transportation, and disposal/destruction. In 2019, the Company's end-to-end business process was as follows:

Good Corporate Governance

1. Regulatory bodies and government agencies relating to business undertakings
2. Employees
3. Customers
4. Suppliers
5. Shareholders and investors
6. Communities and government agencies

Analysis-Development of Water Supply Sources and New Businesses

1. Regulatory bodies and government agencies relating to business undertakings
2. Employees
3. Customers
4. Suppliers
5. Communities and government agencies

Water Pumping System Development and Management, and Innovation

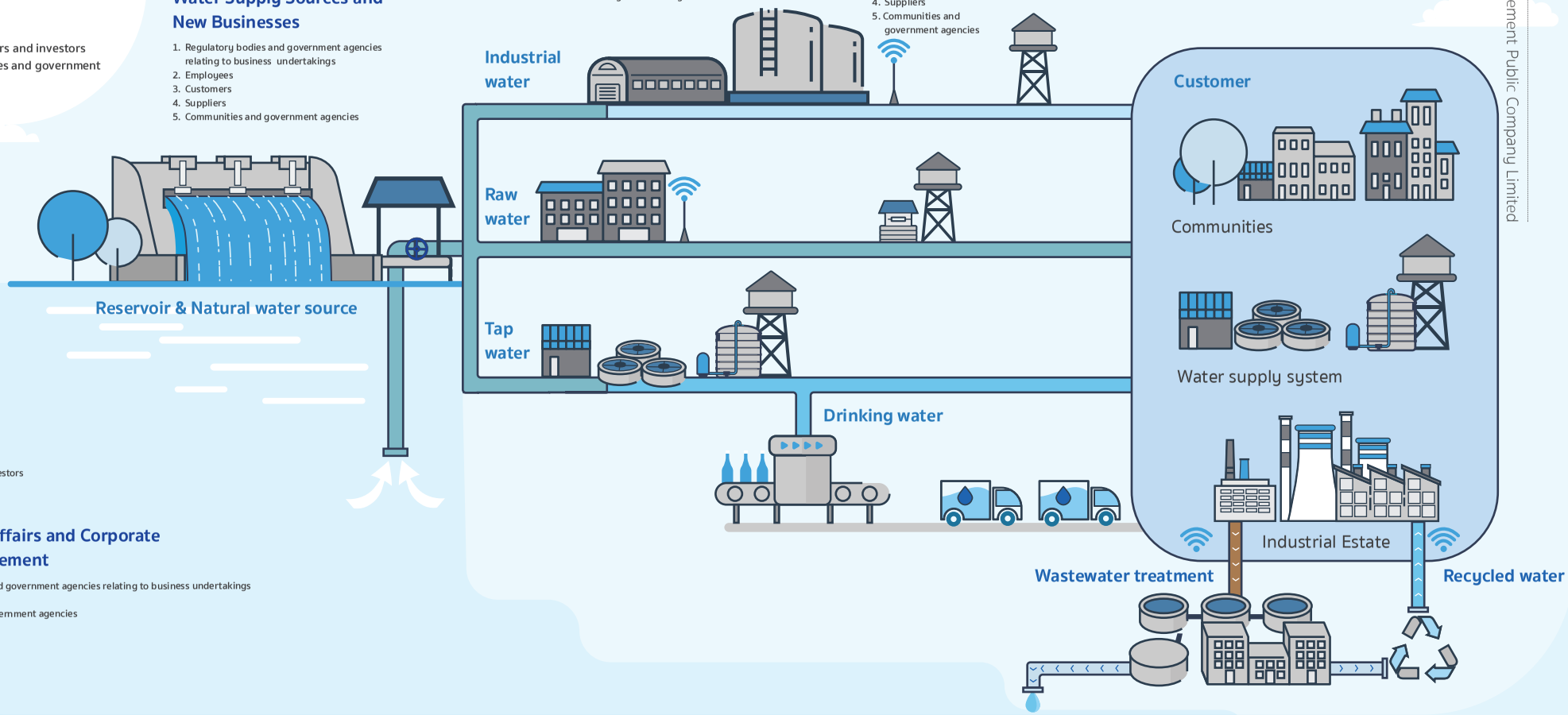
1. Regulatory bodies and government agencies relating to business undertakings
2. Employees
3. Customers
4. Suppliers
5. Communities and government agencies

Construction Project Management (Pipeline Installation and New Businesses)

1. Regulatory bodies and government agencies relating to business undertakings
2. Employees
3. Customers
4. Suppliers
5. Communities and government agencies

Contracts and Customer Relations Management

1. Regulatory bodies and government agencies relating to business undertakings
2. Employees
3. Customers
4. Suppliers



Organization Management

1. Board of Directors
2. Management team
3. Employees

Financial Management

1. Shareholders and investors
2. Financial institutions
3. Employees

Community Affairs and Corporate Image Management

1. Regulatory bodies and government agencies relating to business undertakings
2. Employees
3. Communities and government agencies
4. Mass media

Performance and Sustainability Awards in 2019

Economic (Disclosure 102-7, 201-1)

- Revenue: Baht 4,729.27 million[1] (Sales and service revenue: 98.96%; other revenue: 1.04%)
- Net profit: Baht 1,055.91 million
- Revenue contribution to the government: Baht 262.36 million[2]
- Community development investment: Baht 14.18 million
- OPEX: Baht 538.52 million
- nterim dividends for shareholder: Baht 0.21[3]
- Salary and employee benefits of the business group: Baht 392.84 million

Remarks : [1] The Company's consolidated financial statements. (The Company's sales and service revenue totaled Baht 3,314.02 million; the subsidiaries' sales and service revenue totaled Baht 1,366.06 million; the Company's other revenue totaled Baht 20.97 million; the subsidiaries' other revenue totaled Baht 28.22 million.)

[2] Refers to the business group's income tax for 2019

[3] The 2019 interim dividend was paid from the first-half operating results in accordance with the resolution passed by the Board of Directors at its Meeting No. 9 on 14 August 2019 at the rate of Baht 0.21 per share. The final dividend from the operating results during July-December 2019 will be proposed by the Board of Directors to the 2020 Annual General Meeting of Shareholders on 22 April 2020.

Social and Environmental

- Care for the communities along the water grid of 491.8 km. in length across 23 districts, 39 municipalities, and 54 subdistrict administrative organizations.
- Provide clean water to communities for consumption totaling (drinking water supplied by trucks, packaged water cups, bottled water, and tube water supply) 8,155,717 liters and for agriculture totaling 1,853,113.40 cubic meters.
- Grow 33,300 trees covering 83.25 rais (with 20,000 seedlings distributed and based on the ratio of 400 trees per rai)
- Wastewater treatment project for cafeterias in 7 schools. Dissolved Oxygen level of effluent water increase more than 4 mg/L.
- The average employee engagement score was 84%, a 4.74% increase over the last year.

Governance and Sustainability

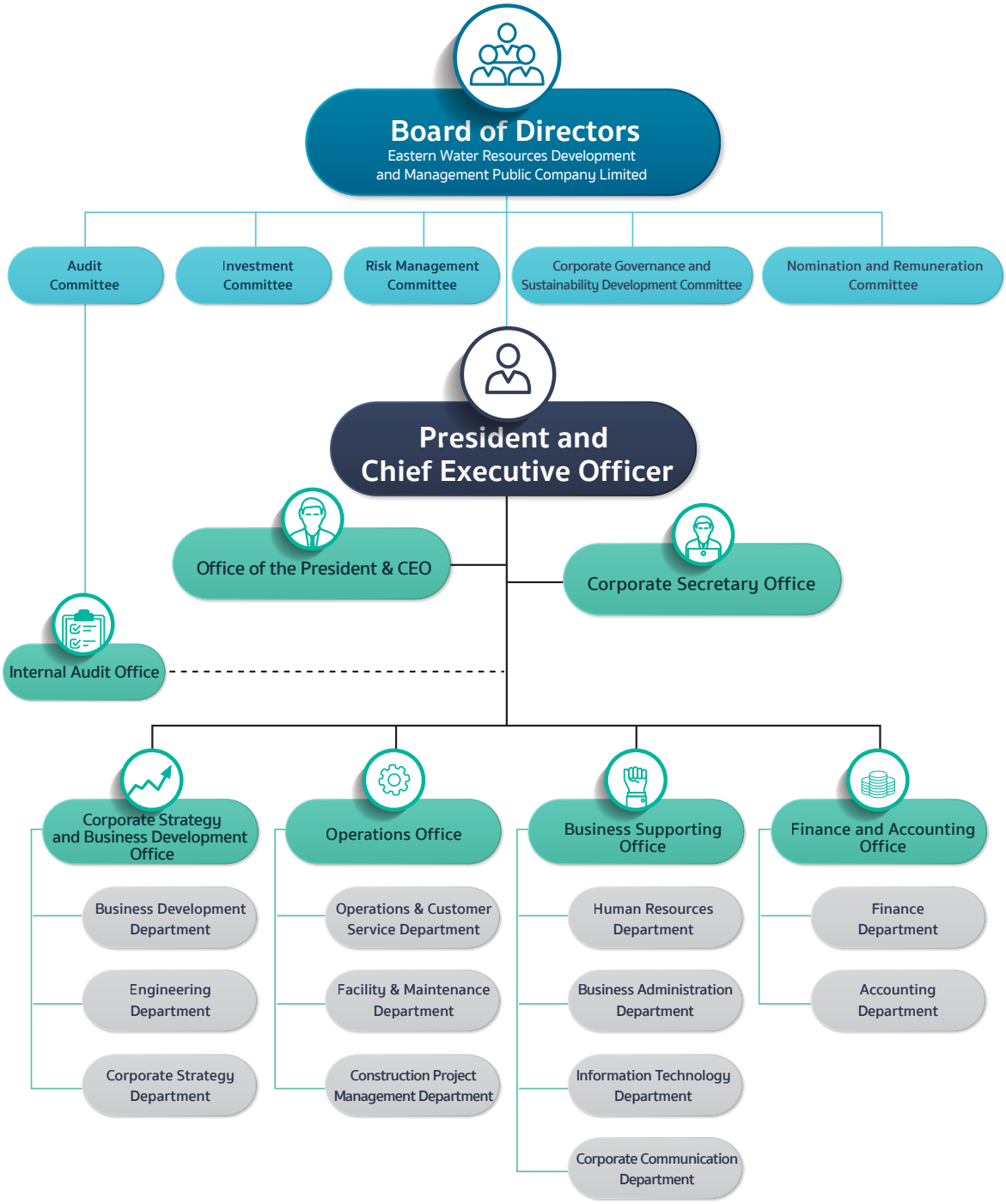
- The Company received the 2019 Rising Star Sustainability Awards, in the Sustainability Excellence category, which is an award for listed companies that have outstanding sustainable business practices.
- The Company was chosen as 1 of the 98 companies in Thailand Sustainability Investment: THSI list for the 5th consecutive year.
- The Company received the Sustainability Disclosure Recognition awards.
- The company achieved an excellent score of 96% from the 2019 Corporate Governance Report (CGR) of Thai Listed Companies.
- The Company received 100% from the evaluation of quality of the Annual General Meeting of Shareholders for the year 2019 from the Thai Investors Association
- The Company received a gold medal for "The Happy Retirement Company Program" held by the Office of the Securities and Exchange Commission (SEC).

Corporate Governance Structure

(Disclosure 102-7, 102-18, 102-20, 102-22, 102-23, 102-24)

In 2019, the Company had 5 subcommittees as follows:

1) Audit Committee
2) Investment Committee
3) Risk Management Committee
4) Corporate Governance and Sustainability Development Committee
5) Nomination and Remuneration Committee. The subcommittees performed duties within the scope of laws and the Company's objectives, Articles of Association, and resolutions of the shareholders' meeting; and had authority to take actions as specified in the Company's Memorandum of Association and applicable laws.



As of January 2020

The Board of Directors consists of directors with diversified qualifications in terms of skills, experiences, capabilities, expertise, gender, and age. Details of Board Skills Matrix are shown below.

Names of Directors	Private Organization Management	Public Organization Management	Water Management	Engineering	Economics/Finance/Accounting	Laws	Audit	Public Policy, Corporate Governance and CSR	Information Technology
1. Mr. Veerasak Kositpaisal (Independent Director)	✓			✓			✓	✓	
2. Mr. Amorn Laohamontri (Independent Director)		✓				✓	✓		
3. Mrs. Tatchada Jitmahawong (Independent Director)		✓			✓		✓		
4. Mr. Surachai Kanasa (Independent Director)		✓						✓	
5. Mr. Kritsada Sunkhamani (Director)		✓	✓	✓					
6. Mrs. Asvini Tailanga (Independent Director)	✓				✓		✓		
7. Mr. Virgilio Cervantes Rivera, Jr. (Director)	✓	✓	✓		✓				
8. Mr. Pisit Hongvanishkul (Director)		✓	✓	✓	✓				
9. Mr. Bumrungsak Chingwangtakor (Director)		✓	✓		✓	✓			
10. Miss Somchint Pilouk (Director)		✓		✓					
11. Admiral Sucheep Whoungmaitree (Independent Director)	✓	✓							
12. Mr. Jirayut Rungsrithong (Director, President & CEO)	✓	✓	✓	✓	✓				✓
Advisors to the Board of Directors									
1. General Trairat Rangaratna		✓							
2. Mr. Siwa Sangmanee	✓	✓					✓		
3. Mr. Vicha Nilpetploy		✓				✓			

The subcommittees with key roles in corporate governance are:

(Disclosure 102-32)

1. Corporate Governance and Sustainability Development Committee consists of 3 independent directors with 2 main duties as follows:

1) Corporate Governance: To consider policies and practices regarding corporate governance, anti-corruption and business ethics of the business group to ensure alignment with requirements of the Stock Exchange of Thailand (SET) and the Office of the Securities and Exchange Commission (SEC). The Committee shall review such policies and practices at least annually and exercise supervision and monitoring to ensure consistent and proper compliance therewith.

2) Sustainability Development: To determine policies, strategies and action plans for sustainability through water management based on sharing water resources with communities and maintaining balances in ecosystems; to build confidence among its stakeholders through transparent and auditable work processes according to the framework of the Global Reporting Initiative (GRI); and to ensure that the management operates business under the concept of social and environmental responsibility to ensure that all entities comply with key objectives, goals and strategies of the organization.

Reporting directly to the Corporate Secretary Office, **the Corporate Governance Division** is responsible for supervising the group-wide compliance and coordinating with all entities in assessing the compliance with applicable rules, regulations, requirements and laws by using the law compliance checklist. The Corporate Governance Division has also communicated good corporate governance practices to all employees and coordinated with the SEC and the SET in disclosing all required information.

In 2019, the Company reviewed the good corporate governance principles, the business group's code of conduct, and the anti-corruption policy to ensure that they were updated regularly by referring to new laws and international practices. In addition, the Company joined hands with relevant agencies in reviewing practices regarding authority to carry out duties within an organization to ensure compliance with the regulations regarding authority to carry out duties within an organization in 2019. The Company also followed up on reports of results of the complaint handling process undertaken upon

the receipt of complaints to ensure compliance with the business group's code of conduct. The reports were submitted to the Corporate Governance and Sustainability Development Committee and the Audit Committee on a quarterly basis. (Disclosure 102-17)

Moreover, the Company set up **the Business Relations and CSR Division** mainly responsible for community, social and environmental activities to ensure sustainable business operations.

2. The Risk Management Committee consists of 3 members is chiefly responsible for the formulation and review of the Risk Management Policy to ensure alignment with the objectives, goals, strategy and risk appetite. The Risk Management Committee also supervises and supports risk management activities that are in conformity to the Risk Management Policy, gives recommendations, endorses the risk management plan, monitors and reviews risks, and communicates and gives advice on risk management to ensure consistent enterprise-wide risk management practices. **The Risk Management Division** is responsible for analysis and review of risk factors and their impacts on the Company's successful business plan execution. (Further details are shown in the Risk Factors section in Page 48 and the Internal Control and Risk Management section in Page 78 of the Annual Report 2019.) (Disclosure 102-11, 102-15). The division is also responsible for proposing suitable risk management guidelines which form a part of the Company's risk management plan. The division is in charge of tracking progress of enterprise-wide risk management practices implemented by all functional units for reporting to the Risk Management Committee.

3. The Audit Committee consists of 3 independent directors, responsible for reviewing correctness and completeness of the Company's financial reports, adequacy of internal control system, and appropriateness and efficiency of internal audit system. The Committee also reviews risk management system and compliance with the Securities and Exchange Act and other applicable laws, rules, regulations, and procedures. Furthermore, the Committee considers related party transactions or transactions with possible conflicts of interest to ensure correctness, completeness and transparency. The Committee reviews the anti-corruption process to be in line with guidelines of relevant supervisory bodies; and the internal process regarding handling and supervising leads or tips and complaints. The Committee is empowered to select auditors and define audit fees.

About this Report

(Disclosure 102-10, 102-45, 102-46, 102-48, 102-49, 102-50, 102-51, 102-52, 102-53, 102-54, 102-56)

Sustainability Report 2019

This Sustainability Report 2019 is the 9th in a series of the Company's annual sustainability reports and is intended as a means to disclose policies, strategies, impact management, and corporate performance to reflect the Company's responsibility towards its stakeholders in economic and governance, social and environmental aspects as they are significant to the Company's sustainability development. The contents are categorized based on the approaches to managing impact on stakeholders in all key processes of business operation which are known as the 6 sustainability approaches. This report is developed in accordance with the core option of the sustainability reporting framework of the Global Reporting Initiative Standard (GRI Standard) at the limited assurance level. Information contained herein is for the reporting period of 1 January to 31 December 2019.

This report presents business operation information in 2019 covering raw water business operations of Eastern Water Resources Development and Management Public Company Limited, and tap water, wastewater treatment, and recycled water business operations in Thailand of Universal Utilities Public Company Limited. It is required that the report should contain the issues the Company gives importance to and has authority to control.

This report contains material changes from 2018 as follows:

1. Information disclosure of Universal Utilities Public Company Limited, the Company's subsidiary (first year)
2. Calculation of employee injury rates using the Human Resources Department's formula for calculating working hours per person per annum.
3. Revision of the Materiality Matrix.

This Sustainability Report is certified at the limited assurance level by a third-party assurance practitioner with expertise in validating and assuring accuracy and reliability of information disclosed according to the Global Reporting Initiative Standard (GRI Standard). High-level executives have been involved in the selection process in compliance with the Company's procurement and hiring procedure.

Guidance for Defining Report Content:

The 2019 Sustainability Report Working Team consists of representatives from all departments of the Company and is appointed by the President and Chief Executive Officer. The working team arranged brainstorming sessions and meetings to jointly consider, review and analyze material sustainability topics; and conclusions were proposed to the President and Chief Executive Officer for consideration and endorsement and to the Corporate Governance and Sustainability Development Committee for acknowledgment before disclosure in the Sustainability Report.

In case of inquiry, please contact:

Miss Chatkaew Poomarin, Vice President, Corporate Communication Department
Eastern Water Resources Development and Management Public Company Limited
East Water Building 1 Vipavadeerangsit 5, Vipavadeerangsit Road, Jomphol, Jatujak, Bangkok 10900 (Thailand)
Telephone : 02-272-1600
E-mail : pr@eastwater.com

This Sustainability Report and previous years' sustainability reports are available for downloading on the East Water's website at www.eastwater.com

Guidance for Defining Key Issues on Sustainability of East Water

Key Stakeholder Involvement (Disclosure 102-40, 102-42, 102-43, 102-44)

The Company analyzed groups of stakeholders from its work processes and prioritized them based on two factors, stakeholders' influence on the Company and impacts from the Company's operations on the stakeholders. Thus, there were 6 groups of stakeholders as follows: **customers, supervisory bodies and government agencies relating to business undertakings, shareholders and investors, communities and government agencies, Suppliers, and board of directors executives and employees.** Relevant functions were assigned to be responsible for communication channels as well as strategic planning and action plans in order to meet expectations of respective key groups of stakeholders as follows:

Key Stakeholders	Expectations	Methods of Participation	Frequency
1. Customers 1.1 East Water customers	1. Quality of raw water 2. Reasonable prices of raw water 3. Water distribution services 4. Convenience in terms of contact/ coordination on water-related matters 5. Relations activities 6. Updates about other activities 7. Availability of water to support customer needs 8. Stability of raw water pipeline grid 9. Total water solutions 10. Reasonable service fees 11. Participation in supporting customers' business continuity	1. Water war room meetings 2. Meetings between executives and major customers 3. Satisfaction survey 4. Project progress monitoring 5. Discussion meetings with customers 6. Customer complaint channels 7. Communication via group text service of Line application 8. Meetings on special days/occasions 9. Meetings with customers to offer total water solutions and recom mendations on relevant aspects of project development to customers	12 times/year 1 time/year 1 time/year 1 time/year Based on the Company's projects Throughout the year Throughout the year Throughout the year Based on the Company's projects
1.2 UU customers	1. Tap water production with quality, clean and clear water 2. Continuous and sufficient flow of tap water 3. Tap water pipeline pressure management 4. Scheduled repairs and maintenance services for tap water pipelines 5. Provision of total water solution services according to customer needs 6. Reasonable service fees 7. Participation in supporting customers' business continuity	1. Meetings with contract parties 2. Satisfaction survey 3. Customer complaint channels 4. Communication via group text service of Line application 5. Meetings on special days/occasions	Based on the Company's projects 4 times/year Throughout the year Throughout the year Throughout the year
2. Supervisory bodies and government agencies relating to business undertakings	1. Strict compliance with rules, regulations, and provisions of laws 2. Collaboration between government and private agencies and communities in maintaining and protecting shared water sources 3. Integration of water management efforts in the eastern coast areas 4. Good relationships and joint activities with the government sector 5. Community wellbeing promotion activities 6. Measures to support the EEC Development Plan	1. Studies on and compliance with requirements, rules, regulations and laws 2. Water war room meetings 3. Meetings with groups of water users 4. Communication via group text service of Line application 5. Meetings on special days/occasions 6. Studies on climate forecasts based on different climate models 7. Relations activities	Throughout the year 12 times/year 2 - 4 times/year Throughout the year 2 - 4 times/year 1 time/year 2 - 4 times/year

Key Stakeholders	Expectations	Methods of Participation	Frequency
3. Shareholders and investors	1. Construction project progress and new businesses 2. Raw water sales volumes, quarterly sales, operating results, and profits 3. Investment budgets to embrace EEC & expected future water sales volumes 4. New business growth direction 5. Principles of good governance and corporate compliance 6. Water management innovation 7. Awards for sustainability performance from outside agencies 8. Plans to handle declining water purchase volumes from customers 9. Water price structure 10. Measures to address drought issues 11. Suitable rates of returns and dividends 12. Timely supply of clear and complete information and news to investors and shareholders 13. More relations activities 14. Equal care and treatment of customers' investments	1. Annual General Meetings of Shareholders (AGM) 2. Site visit activities 3. Communications of corporate performance to investors/shareholders such as roadshows, Opportunity Day sessions, company visits, etc. 4. CSR activities 5. Satisfaction surveys 6. Declaration of operating results (Management discussion and analysis: MD&A) 7. Q&A sessions via telephones and emails	1 time/year 2 times/year Throughout the year 1 time/year 2 times/year 4 times/year Throughout the year
4. Communities and goverment agencies	1. Water management to meet communities' water demand 2. Education on water resource protection and conservation 3. Quality water management 4. Support of water-related water activities 5. Development or support of water management projects to ensure water sufficiency for all sectors 6. Installation of pipelines and restoration of road conditions according to standards 7. Integration of water management efforts in the eastern coast areas	1. Studies on and compliance with requirements, rules, regulations and laws 2. Satisfaction surveys 3. Public relations activities for projects 4. Follow-up meetings on community related issues and resolution 5. Life quality and environmental development activities for communities 6. Meetings on special days/occasions 7. Meetings with water users under the topic of the Prasae Operation and Maintenance project 8. CSR activity performance evaluation	Throughout the year 2 times/year Based on project availability Upon complaints Monthly 1 time/year 2 – 4 times/year All CSR activities hosted by the Company
5. Suppliers	1. Fast services and more diversified public relations channels about procurement 2. Transparent and standardized processes 3. Less strict requirements regarding registration 4. Business expansion plan for growth 5. Regular updates on phone contact information	1. Meetings to explain scope of work for projects worth Baht 1 million up 2. Relations activities 3. Site visits 4. Follow-up on work progress 5. Satisfaction surveys	Upon each exam/ bidding 1 time/year 2 times/year Upon each exam/ bidding 2 times/year
6. Board of directors executives and employees	1. Welfare scheme adjustments to ensure flexibility and more benefits for employees 2. Protection of health and wellness of employees and employee exercises 3. Career path and suitable compensation rates 4. Occupational safety protection equipment and safety plans	1. Employee satisfaction and engagement surveys 2. Meetings of 2 welfare committees 3. Meetings of the Occupational Safety, Health and Environment Committee 4. Receipts of complaints from employees 5. CEO meeting with employees 6. Board of Directors' meetings	1 time/year 8 times/year 12 times/year 12 times/year 1 time/year 12 times/year

Sustainability Materiality Topic Identification

(Disclosure 102-33, 102-47)

The Company identified sustainability materiality topics by taking into account internal factors and external factors. Internal factors included corporate governance principles adopted in its operations, policies, strategies, targets, and business plans. External factors included national or global interests and trends, complaints and wants, expectations, and consistent recommendations of the stakeholders. Then, the Company prioritized sustainability materiality topics based on 3 dimensions, economic and governance, social, and environmental, using the following procedures.

1 Collection of Sustainability Materiality Topics

- Internal information (policies, strategies, targets, business plans, and risk factors)

To identify key topics through brainstorming of ideas from executives via workshops, prepare strategies, and determine enterprise risks with possible impacts on organizational sustainability in the short- and long-terms.

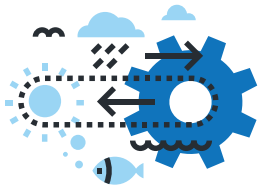
- External information (national and global trends and interests)

To review national and global trends and interests in alignment with Sustainable Development Goals (SDGs) and expectations of the stakeholders through opinion surveys in official and unofficial forms such as meetings, seminars, interviews, or discussion meetings as well as surveys of opinions and satisfaction of each group of stakeholders.

2 Prioritization

Sustainability materiality topics were gathered from internal and external factors, given ratings and prioritized according to two criteria. Those topics were then specified in the Materiality Matrix according to 2 axes.

- Horizontal axis: Those were key topics considered by the Company based on possible impacts on its operations in terms of economic and governance, social, and environmental aspects. Other topics included opportunities and business risks, provisions of laws, and interests of different groups of stakeholders.
- Vertical axis: Those were key topics considered by the stakeholders based on possible impacts from the Company's operations on the stakeholders in terms of economic and governance, social, and environmental aspects. Other topics included issues with positive and negative impacts on the decisions made by the stakeholders with possible consequences on the Company.



3 Review of Report Content (Disclosure 102-32)

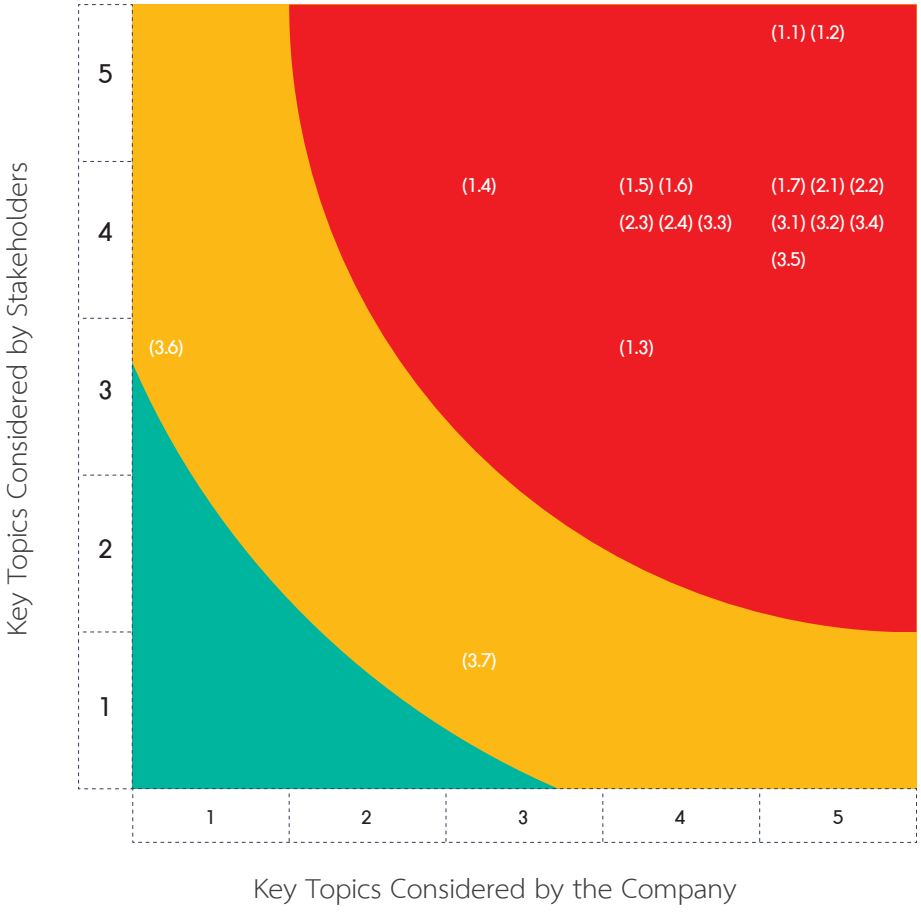
Key topics obtained from the analysis by the Sustainability Report Working Group of the Company Group were proposed to the high-level executives for consideration and endorsement. The said topics were also endorsed by the Corporate Governance and Sustainability Development Committee. The topics were then used to specify the scope of content to cover 3 dimensions, namely economic and governance, social, and environmental.

Sustainability Materiality Assessment Results 2019

1. Economic and Governance Dimension	2. Environmental Dimension	3. Social Dimension
1.1 Good corporate governance and regulatory compliance 1.2 Sustainable business growth 1.3 Reduction of costs of production, pumping and distribution, and internal processes 1.4 Standards of water pricing structure for total water solutions 1.5 Customer satisfaction with service quality 1.6 Good relationships with key stakeholders 1.7 Responsibility for products and services (waterworks)	2.1 Changes in water quality 2.2 Pollution control and energy saving 2.3 Climate change and disasters with impacts on water supply sources 2.4 Stabilization of water pipeline net work system and efficiency of water pumping and distribution system	3.1 Human rights and employment to drive sustainable economy 3.2 Occupational health and safety 3.3 Personnel development and career advancement 3.4 Control standards for construction project works 3.5 Responsibility for society, communities and the environment as well as corporate image 3.6 Happiness welfare schemes 3.7 Corporate cultures and values

Remark : Topic 1.1 addressed all 3 dimensions (economic and governance, social, and environmental.)

Materiality Matrix
(Disclosure 102-28)



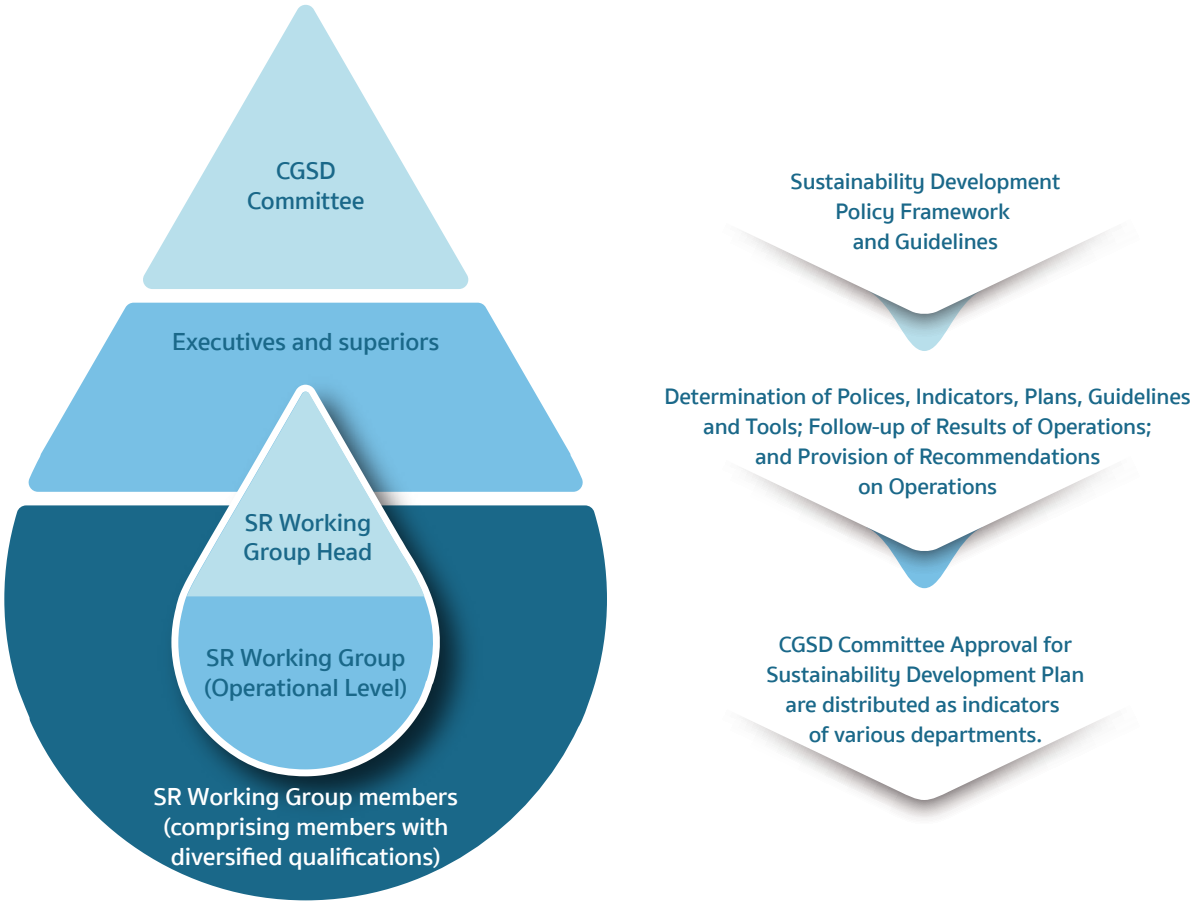
Sustainability Materiality Matrix 14 issues and 17 indicators were identified per the below summary.

Sustainability Topics	Key Topics Considered by the Company/ Stakeholders	Groups of Stakeholders						EWG Sustainability Aspects	GRI Standard Title	Alignment with SDGs
		Customers	Shareholders and investors	Supervisory bodies and government agencies relating to business undertakings	Communities and government agencies	Suppliers	Directors, executives and employees			
Economic and Governance Dimension	1. Good corporate governance and regulatory compliance	✓	✓	✓	✓	✓	✓	1. Good corporate governance principles 2. Sustainable management of trading partners 3. Achievement of sustainable growth with total water solution management 4. Customer satisfaction management 5. Complaint management	General Disclosures (102-16, 102-17) Anti-Corruption (205-2) Economic Performance (201-1, 201-2) General Disclosures (102-43, 102-44) Evaluation of the management approach (103-3)	12.7, 16.5 6.3, 9.1, 9.4
	2. Sustainability business growth	✓	✓			✓				
	3. Reduction of costs of production, pumping and distribution, and internal processes		✓							
	4. Standards of water pricing structure for total water solutions	✓	✓							
	5. Customer satisfaction with service quality	✓		✓						
	6. Good relationships with key stakeholders	✓	✓	✓	✓	✓	✓			
	7. Responsibility for products and services (waterworks)	✓		✓						
Environmental Dimension	1. Changes in water quality	✓		✓	✓			1. Responsibility for work processes 2. Measures to respond to climate change 3. Eco-friendly innovation (energy saving, non-revenue loss of water reduction, and clean technology)	Energy (302-3) Emissions (305-2) Water and Effluents (303-1, 303-3, 303-5) Effluents and Waste (306-1)	6.1, 6.4, 6.5
	2. Pollution control (construction works based on standards and without environmental impacts) and energy saving		✓	✓	✓					
	3. Climate change and disasters with impacts on water supply sources		✓	✓	✓					
	4. Stabilization of water pipeline network system and efficiency of water pumping and distribution system	✓		✓						

Sustainability Topics	Key Topics Considered by the Company/ Stakeholders	Groups of Stakeholders						EWG Sustainability Aspects	GRI Standard Title	Alignment with SDGs
		Customers	Shareholders and investors	Supervisory bodies and government agencies relating to business undertakings	Communities and government agencies	Suppliers	Directors, executives and employees			
Social Dimension	1. Human rights and employment to drive sustainable economy			✓			✓	1. Core values 2. Personnel and organizational development 3. Employee welfare management and protection 4. Occupational health and safety 5. Responsibility for construction impacts 6. Community sustainability projects	General Disclosures (102-16) Employment (401-1) Training And Education (404-1, 404-2) General Disclosures (102-41, 102-43, 102-44) Occupational Health And Safety (403-1, 403-5, 403-9) Management Approach (103-2) Local Communities (413-2) Economic Performance (201-1) Indirect Economic Impacts (203-1)	4.3, 4.5, 5.1, 8.5 8.8 2.1, 2.4, 4.4, 4.5, 6.3, 6.6, 8.9, 13.3, 15.1, 15.2
	2. Occupational health and safety				✓	✓	✓			
	3. Personnel development and career advancement						✓			
	4. Control standards for construction project works		✓	✓	✓					
	5. Responsibility for society, communities and the environment as well as corporate image		✓	✓	✓					
	6. Happiness welfare schemes						✓			
	7. Corporate cultures and values									

Policy Sustainability

The Company managed organizational sustainability in economic and governance, social, and environmental dimensions, based on internal and external factors and changes through the Corporate Governance and Sustainability Development Committee. This allowed the Company to be prepared and ready for changing circumstances in a timely manner. The sustainability management structure is divided into 3 levels as follows: (Disclosure 102-19, 102-20)



Policy Level The Company set up the Corporate Governance and Sustainability Development (CGSD) Committee to identify directions, policies, and targets on sustainability operations of the Company. (Disclosure 102-26)

Strategy and Plan Level The executives and superiors conducted operations according to specific policies and targets; brainstormed ideas to lay down strategies, plans, indicators and goals to ensure alignment with the policies from the CGSD Committee; followed up on and reported progress of sustainability operations to the CGSD Committee.

Operational Level The SR Working Group was established by the Company, consisting of representatives from across functions of the Company, in order to implement the specific strategies and plans and to report progress and results of the operations to the executives for acknowledgement on a regular basis. Furthermore, the Company set up sub-working teams to support sustainability operations, such as the Energy Conservation Committee, the Occupational Safety, Health and Environment Committee, and the Welfare Committee.

East Water and Sustainable Development

In 2018, the Company embarked on the business expansion into the **"total water solutions"** to provide integrated services from raw water, industrial water, tap water, drinking water, and wastewater treatment to recycled water services to clients in its operational areas (Chachoengsao, Chonburi and Rayong) and the Eastern Economic Corridor (EEC) zones in the eastern region of Thailand. The Company therefore conducted business restructuring and established the Corporate Governance and Sustainability Development (CGSD) Committee to identify policies, strategies, and plans for sustainability development to ensure alignment with business undertakings in terms of economic and governance, social, and environmental aspects of the Company. The CGSD Committee also promoted and supported various corporate activities to achieve goals as per sustainability development policies which were connected to corporate strategies relating to community, social and environmental responsibility and creation of good relationships with stakeholders with transparency according to corporate governance principles through management operations.

8 Key Operation Guidelines

(Disclosure 102-9)

1 Corporate Governance

Honesty, transparency, and auditability are the Company's Code of Conduct and are the principles by which all employees abide in their operations. Risk management and business continuity planning (BCP) are conducted annually.

2 Organization Management

The Company shall conduct business restructuring to ensure consistency between policies, strategies, and organizational development plans towards sustainable growth. Directors, executives and employees shall perform duties towards the same direction to achieve organizational goals.

3 Financial management

Emphasis is placed on effective internal control system, continuous financial risk management, and preparation of an annual financial report using appropriate accounting policies and information management systems of recognized standards. The report is certified by an auditor to ensure transparency and accuracy, reflecting solid credit rating and unwavering credibility.

4 Contract and customer relationship management

Focus is placed on management of the Company's contracts with each group of stakeholders through supervising the compliance with the governance principles; vigilantly monitoring the execution of the contracts to ensure compliance with specific standards; and continuously enhancing efficiency of the operations to satisfy the needs of the stakeholders who are the contract parties.

5 Analysis and development of water supply sources and new businesses

The Company shall join hands with government and private entities in analyzing climate change and water situation in relevant areas as well as determining guidelines to improve capacities of water supply sources to accommodate more water needs. The Company shall also prepare total water solution business plans to be ready for global climate change and meet different needs. Its products shall be diversified to ensure business sustainability.

6 Management and development of water pumping and distribution system and innovation

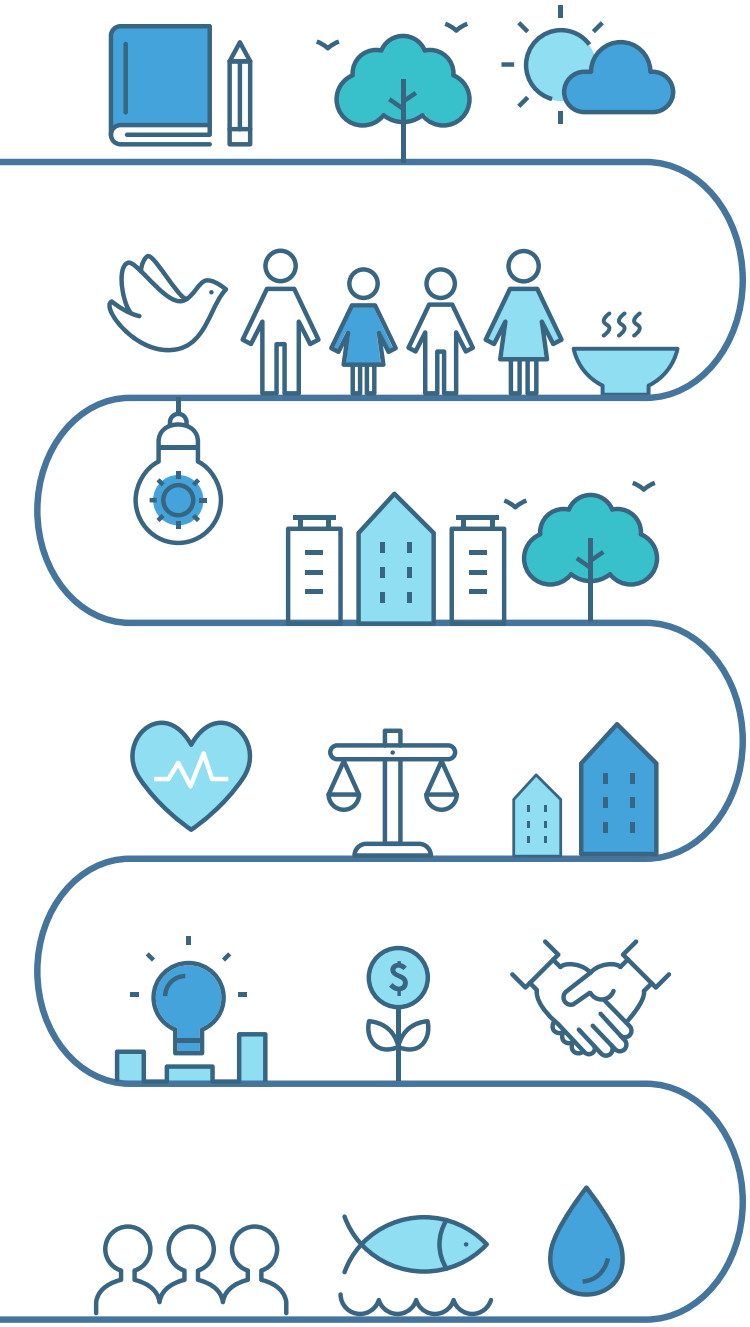
The Company designs and develops its water pumping and distribution system by applying modern innovations and technologies to increase speed and accuracy, reduce non-revenue water loss, and save energy used to run the water pumping and distribution system, with a system design unique to each water user.

7 Project management (pipeline installation and new businesses)

Construction is a key process affecting almost all groups of stakeholders. Thus, the Company lays down a set of standards for working with its stake holders participating in the process, especially trading partners and surrounding communities. The Company also brings technologies and innovations as part of project management to improve work efficiency and prevent possible impacts.

8 Community management and corporate image

Effective water management is practiced to accom modate business needs by ensuring sufficient water resources shared by all sectors, uncompromising the well-being of water users of other sectors, and upgrading the quality of life of the residents in communities along the 491.8 km water grid under the 3-pronged development framework that focuses on water infrastructure and environmental conser vation, quality of life of communities, and learning.



Moreover, the Company applies international regulations and standards as its guiding framework for business management to enhance its operations towards sustainability (Disclosure 102-12) as described below.

(1) Sustainability reporting standards of the Global Reporting Initiative (GRI)
(2) Securities and Exchange Act
(3) 2017 Corporate Governance Code of the SEC
(4) The Company's Sustainability Policy
(5) The Anti-Corruption Policy of the Thai Institute of Directors (IOD) Association
(6) International Standards for the Professional Practice of Internal Auditing
(7) Notifications of the National Environment Board
(8) Ministerial Regulation on Standards for Administration and Management of Occupational Safety, Health and Environment
(9) Building Control Act
(10) Factory Act
(11) Water Resources Act
(12) Quality Management System (ISO 9001:2015) and Environmental Management System (ISO 14001:2015)
(13) Professional practice standards applicable to professional practice licensees under the Engineer Act B.E. 2542 and the Engineering Profession Act B.E. 2505
(14) Sustainable Development Goals (SDGs) of the United Nations
(15) Greenhouse gas inventory according to the World Resource Institute's guidelines and the estimation of emission factors according to the standards of the Energy Policy and Planning Office, Ministry of Energy
(16) Labour laws and other laws applicable to human resources management

In addition to the adoption of the aforementioned regulations and standards, the Company joins various networks to create synergy, strength and sustainability through collaboration.

Membership in Sustainable Development Networks (Disclosure 102-13)

Agency/Organization	Benefits
1. Thailand's Private Sector Collective Action Coalition Against Corruption (CAC) By Thai Institute of Directors Association, Thai Chamber of Commerce, International Chamber of Commerce Thailand, Thai Listed Companies Association, Thai Bankers' Association, Federation of Thai Capital Market Organizations, Federation of Thai Industries, and Tourism Council of Thailand	Building trust and confidence in transparency of business operations which is an important issue for all sectors
2. Public-Private Partnership Committee on Water Resources Management in Eastern Region Established by Federation of Thai Industries	Networking with business operators in the industry who are the Company's customers
3. Eastern Region Water War Room Working Group Members are business operators in the industrial sector, Industrial Estate Authority of Thailand, Water Institute for Sustainability, and Irrigation Department	Closely monitoring and solving water issues in the Eastern region
4. Member and Technical Member of Thai Waterwork Association	Academic networking in water management at national level
5. Member of Advisory Panel of the Eastern Forest Complex Conservation Committee of National Park Innovation Institute, National Park Office, National Park, Wildlife and Plant Conservation Department	Joining forces in the preservation of forests which are origins of major water sources of the Company
6. Member of the "OUR Khung BangKachao" Supervision Subcommittee by Chaipattana Foundation	Joining forces in the development of the Khung BangKachao green zones together with government, private and community entities under the supervision of the Chaipattana Foundation to drive economic and social growth along with sustainable eco-friendliness through the 6 work processes, namely 1. Adding of green zones 2. Water management and prevention of river bank erosion 3. Waste management 4. Vocational promotion 5. Tourism and 6. Youth development and education
7. Member of the Vibhavadi Zero Waste project By Office of the Securities and Exchange Commission (SEC)	Jointly raising awareness of everyone about the importance of the environment and efficient waste management

eastwater

URD

Good Corporate Governance

(Disclosure 205-2)

The Board of Directors formulated the Corporate Governance (CG) policy in writing in 2003 and later revised the CG policy according to the Office of the Securities and Exchange Commission (SEC)'s Corporate Governance (CG) Code for Listed Companies 2017. The Corporate Governance and Sustainability Development Committee was assigned by the Board of Directors to screen the policy and guidelines on policy implementation on an annual basis to ensure compliance with changing laws, regulations, and rules as well as recommendations by applicable institutions and international standards, before submission thereof to the Board of Directors for consideration and approval.

The Company complied with its CG Code which contains 8 principles. (Please refer to additional details in the Corporate Governance section, Page 64, of the Annual Report.) The CG Code and the Code of Conduct of the East Water Group were published in electronic forms via the Company's official website at www.eastwater.com and its internal website for easy searches and inquiries. The relevant documents were also distributed to the Board of Directors and all employees for acknowledgement.

Integrity Promotion Activities 2019
Anti-Corruption

The Company's membership of Thailand's Private Sector Collective Against Corruption (CAC) was re-certified on 5 November 2018. The said certificate shall be valid for another 3 years from the date of the endorsement resolution. The Company put in place the proper behaviors and practices with regard to anti-corruption within the organization for directors, executives and employees as part of the anti-corruption policy. The policy is reviewed every year and disclosed to relevant parties through the Company's website.

In 2019, the Company conducted a number of activities and arrangements for in-house and outside seminars to promote the good corporate governance and anti-corruption principles for its directors, executives an employees of the Company Group as follows:

Date	Courses/Activities	Total participants (persons)	% of all employees (%)	Employee level			Region			Type of employment	
				Executives (persons)	Superiors (persons)	Operating employees (persons)	Central (persons)	Eastern (persons)	Western (persons)	Permanent employees (persons)	Contract employees (persons)
29 April 2019 and 28 September 2019	Corporate Governance for Executives by Thai Institute of Directors Association	3*	1.31	3	-	-	3	-	-	3	-
23 May 2019	Corporate Legal Risk Management Summit 2019 by SNP Training	2*	0.87	-	-	2	2	-	-	2	-
1 July 2019	Ethical Leadership Program by Thai Institute of Directors Association	1*	0.44	1	-	-	1	-	-	1	-
12 July 2019	Lunch Talk: "The new business laws in 2019 including the Public Private Partnership Act, the Ratchaphatsadu Land (State Land) Act, and the Private Data Protection Act"	22**	5.95	11	2	9	22	-	-	22	-
6 September 2019	Anti-Corruption Day activities under the concept of "Fighting Corruption Together" by the Anti-Corruption Organization of Thailand	35**	9.46	4	4	27	35	-	-	35	-
10 September 2019	The training in the topic of "Ethics and Organizational Sustainable Development" with the guest speaker, Mr. Thanakrit Permpoonkantisuk	35**	9.46	10	18	7	27	8	-	35	-
12 September 2019	Compliance Management and Rules and Regulations for Specific Preparation By Siripattana Training Center, NIDA	2*	0.87	-	-	2	2	-	-	2	-
24 September 2019	Director Certificate Program by Thai Institute of Directors Association	1*	0.44	1	-	-	1	-	-	1	-
8 October 2019	"Business and Human Rights" by Stock Exchange of Thailand	2*	0.87	-	-	2	2	-	-	2	-

Date	Courses/Activities	Total participants (persons)	% of all employees (%)	Employee level			Region			Type of employment	
				Executives (persons)	Superiors (persons)	Operating employees (persons)	Central (persons)	Eastern (persons)	Western (persons)	Permanent employees (persons)	Contract employees (persons)
16 October 2019	"EWG Love CG: Employees with SHARP Hearts – The Smart Fight against Corruption," a campaign against corruption within the organization on the occasion of the 27th anniversary of the Company	290**	78.38	26	44	220	184	106	-	289	1
28 October 2019	"Corruption Risk & Control: Technical Update," hosted by Thai Institute of Directors Association	1*	0.44	-	1	-	1	-	-	1	-
20-21 November 2019	New-hire orientation session to communicate the anti-corruption policy to new employees	33**	8.92	-	-	33	16	17	-	19	-
12-26 December 2019	Knowledge test about the CG Code and the Code of Conduct for all employees of the Company Group	347**	93.78	22	48	277	218	123	6	347	-

Remarks : The number of employees of the Company as at 31 December 2019 was 229.
The number of employees of its subsidiary (UU) was 141. The total number of employees of the business group was 370.
* This refers to only employees of the Company joining in the activities.
** This refers to employees of the business group joining in the activities.

To ensure that all employees have knowledge and understanding regarding the East Water's Code of Conduct and the anti-corruption policy, the Company provides online tests. The test scores can be used to measure levels of knowledge and understanding of the employees for further communication improvements. This will help raise awareness about employees' duties with ethics and transparency, which will lead to sustainable business operations.

In 2019, the Board of Directors endorsed an amendment to the complaint handling process. In this regard, the Secretary of the Corporate Governance and Sustainability Development Committee shall collect original complaints. The investigation committee shall be set up to investigate into the complaints. The disciplinary action committee shall be set up also. Timeframes for different steps during the process shall be more clearly established. Summary reports of the operations shall be submitted to the President & CEO, the Corporate Governance and Sustainability Development Committee, and the Audit Committee for acknowledgement on a quarterly basis. The Company has a number of communications channels through which complainants can send complaints as follows:

(1) The Company's website: www.eastwater.com

(2) E-mails:
- Audit Committee: AC_EW@eastwater.com
- President and CEO: CEO@eastwater.com
- Corporate Secretary: Corporate_secretary@eastwater.com

(3) Regular mails: Audit Committee
Eastern Water Resources Development and Man agement Public Company Limited
East Water Building, 25th Floor
1 Vipavadeerangsit 5, Vipavadeerangsit Road, Jomphol, Jatujak, Bangkok 10900 (Thailand)

(4) Opinion Box: Human Resources Department

Apart from the aforesaid channels, the Company established an investor relations function to receive opinions and complaints from its shareholders and investors. There is also a mechanism to protect the whistleblowers as they participate in monitoring and preserving the interests of the Company. At the end of 2019, there was one complaint being filed. The issue was being subjected to the fact-finding process according to the complaint handling process as specified in the Company Group's Code of Conduct.

Sustainable supplier management

In 2019, the Company reviewed the procurement procedures with an outside consultant by assessing adequacy of internal control system to ensure operational risk mitigation and adequate trading partner management. The Company announced the use of the new procurement procedures in January 2019 together with the procurement policy with a focus on providing best benefit to the Company and ensuring that the Company will receive products or services according to required amounts, qualities, prices, and delivery timeframes with social and environmental responsibility. The procurement process is conducted according to the procurement procedures with transparency and auditability according to the corporate governance principles. The procurement process is linked to the modern management information system, ranging from trading partner selection, trading or hiring contract execution, performance monitoring, and post-delivery results evaluation, to payments of products or services. This is to ensure that the Company and its trading partners are able to jointly undertake transactions fairly and in compliance with laws.

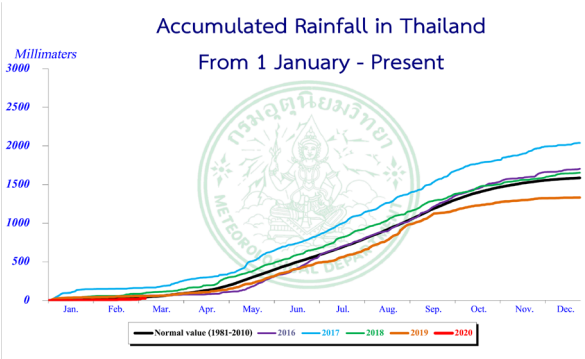
- Transparent, fair, and comply with the law
- The purchase that may cause mutual conflict of interest is not allowed
- The Supplier that may cause mutual conflict of interest is not allowed
- Thedisclosure of information from the applicants which may cause an advantage is prohibited
- No contact with the supplier that have mutual conflict of Interest

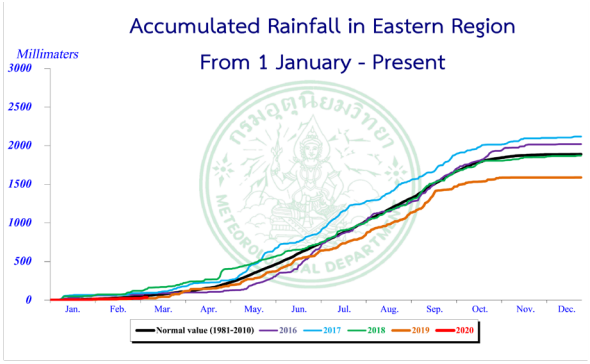
In the past year, the Company disclosed its anti-corruption policy to its suppliers through price inquiries and bidding and through the website to invite its suppliers to jointly declare their intention to join the CAC. The Company also promoted anti-corruption practices through a panel discussion forum to thank its trading partners and tenants in 2019. The forum was held under the topic of “Achievement of Success by Dhamma Guidance” joined by Phra Maha Sompong Talaputto and the Dhamma Delivery Group. The forum content was about how to use mindfulness in leading professional and personal lives. He also taught about how to apply the principles of integrity and honesty to work for sustainable business growth. There were 127 participants, including trading partners, tenants, and employees.

Building sustainable growth with total water solutions management

(Disclosure 201-1, 201-2)

Based on information of the Meteorological Department, it was found that in 2019, the rainfall volume reached the lowest level in 20 years due to fluctuating weather conditions. As an operator and developer of the raw water delivery system through the large pipeline grid to the industrial and household sectors in the eastern coast areas, the Company had short- and long-term water supply source management plans to accommodate possible impacts. (Please refer to the "Climate Change Response" section, Page 48, of this report.)





Source : http://climate.tmd.go.th/gge/Gra_AccumRain.pdf

The Company continued its commitment to ensuring security in terms of water quantity and quality while taking into consideration business growth opportunities based on key factors such as the trends of green businesses and, most importantly, the government policy on the Eastern Economic Corridor (EEC) Development Plan. The plan is part of the Thailand 4.0 strategy with a view to further developing areas in continuation from the eastern coast areas to elevate Thailand's competitiveness. This led to a rise in the demand for water with consistent quality standards.

Source : Office of the Eastern Economic Corridor Policy Committee (EEC Policy Committee)

The Company played a part by supporting the said national strategy through providing total water solutions, including raw water, industrial water, wastewater treatment, and recycled water services for different industrial customers. The Company successfully reduced costs and expenses of its customers efficiently; and established security in terms of water quantity and quality with required standards despite fluctuating weather conditions and seasonal changes. The Company gained advantages as a leading provider of water management services. The Company received financial support and collaboration from the government sector as operating the business of water distribution through pipelines entailed large amounts of investments in the construction and installation of water pipelines and the construction of pump stations as well as the knowledge and expertise in managing water supply sources and licenses from relevant authorities.

With the presence of marketing opportunities and existing capabilities, the total water solution business is expected to achieve further growth in the future. The Company stipulated the direction of the total water solution business to achieve sustainability by expanding its raw water business. The Company applied the concept of encouraging industrial sectors to access total water solution management services according to their preferences. This led to solutions to issues regarding water quantity and quality as well as price costs and cost-effectiveness.

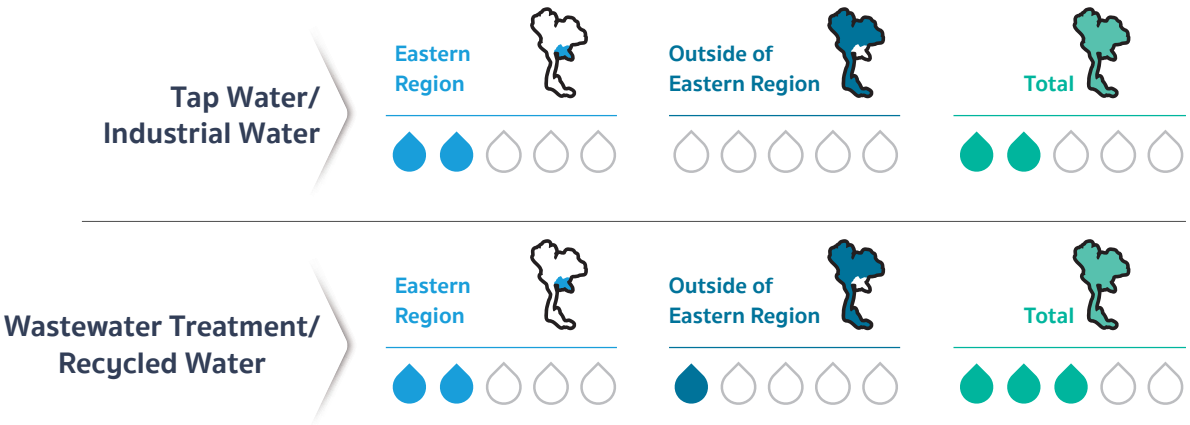
Total Water Solution Management: To expand the raw water customer base through offering, for example, raw water, tap water, reverse osmosis seawater, wastewater treatment, and recycled water management services by focusing on new water users in and outside of the eastern region. The Company had plans to set up a total water solution expert team to provide comprehensive consultation services to new and old water users.

Industrial Water Services to Solve Water Quality Problems: To change from raw water services to industrial water (treated raw water) services suitable for specific water users of the Company. This led to the solving of the problem of quality of natural raw water, the operators' access to sufficient clean water, the saving of raw water resources, and the ability to use such industrial water in for the production or usage by the users in a timely manner. Thus, the operators no longer needed to have a step of water treatment or clean water production within their facilities.

Water Management within Industrial Estates (Operation and Maintenance) and Wastewater Treatment: To focus on certification of water quality according to legal requirements and enable the proper reuse of water in the production process. This led to the operators' saving of expenses of clean water, better use of water resources with awareness of their values, and less environmental impacts.

In 2019, the Company started its project to construct industrial water production system with the total capacity of 100,000 cubic meters per day in Rayong. Currently, the project to construct industrial water system for the Amata City Industrial Estate Rayong was 60% completed. The production and distribution of industrial water to the Amata City Industrial Estate Rayong and the Gulf Power Plant Pluak Daeng was expected to begin in 2020 and 2021, respectively.

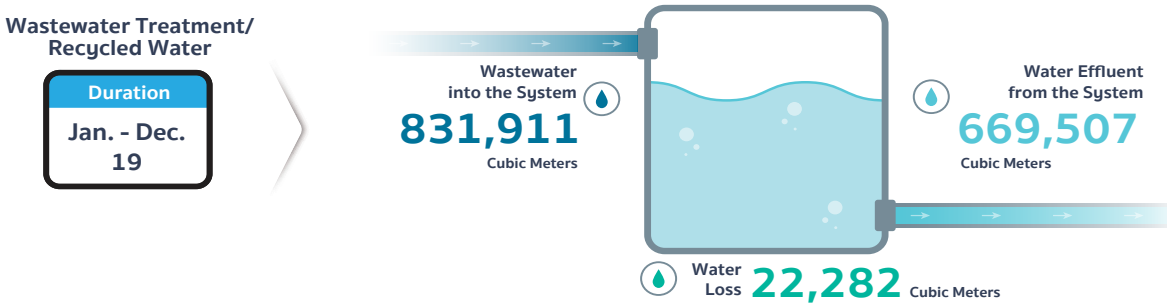
The Company earned trust from the public and private sectors as the Company continued to provide total water solution services nationwide. In 2019, the number of additional projects in operation was as follows:



• **Total Water Solution Business** The Company received a letter of intent to operate a tap water system and wastewater treatment project in Chonburi. Currently, the Company is in the process of arranging land rent contracts and tap water trading contracts with parties in charge of the project. The project is aimed at supporting the expansion of the EEC zones. The project enables a maximum volume of tap water usage of 20,000 cubic meters per day; a maximum volume of wastewater to be treated of 16,000 cubic meters per day; a maximum volume of recycled water for use in the project area of 5,000 cubic meters per day. The project contract duration is 25 years, with the start of operations in 2022.

• **Industrial Water Business** The Company received a confirmation letter for the use of industrial water services in Chachoengsao where there are different types of businesses including IC and micro-controller production for the automotive industry, the consumer industry, and the communication systems in November 2019. The maximum level of industrial water demand 2,500 cubic meters per day.

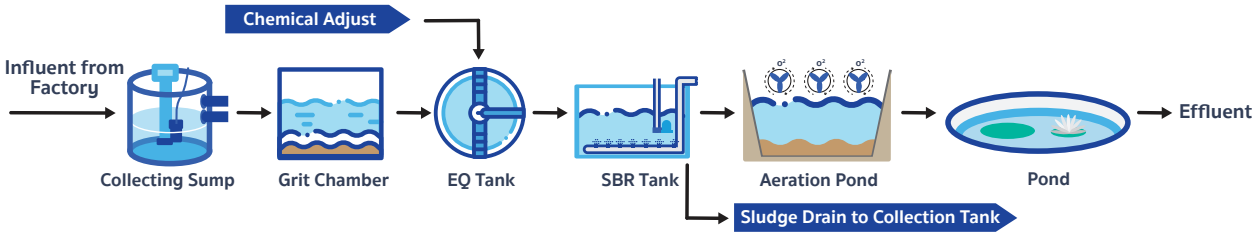
• **Wastewater Treatment/Recycled Water** (Disclosure 306-1) The Company signed a contract to construct a recycled water system with a glass package manufacturer in Ayutthaya. The contract is aimed at producing recycled water for use with the maximum usage capacity of 3,000 cubic meters per day for a period of 15 years. Currently, the construction was completed and the operation already started in June 2019.



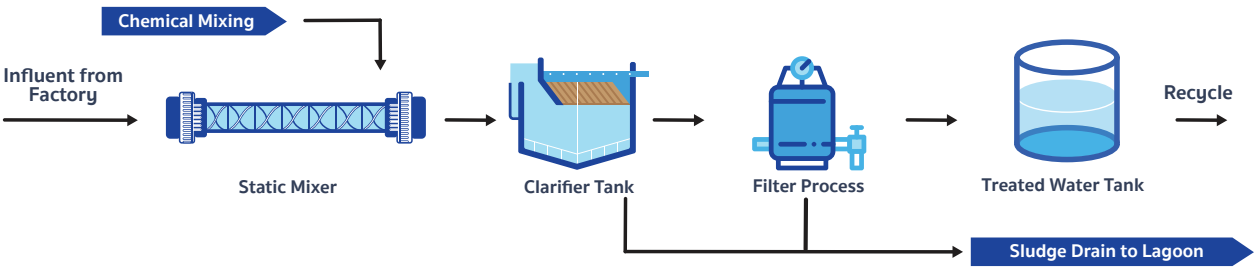
Remark : * A portion of the treated water (140,122 cubic meters) was stored in the polishing pond and was not released to any public water source.

Wastewater Treatment Process

Sequencing batch reactors (SBR) Treatment System

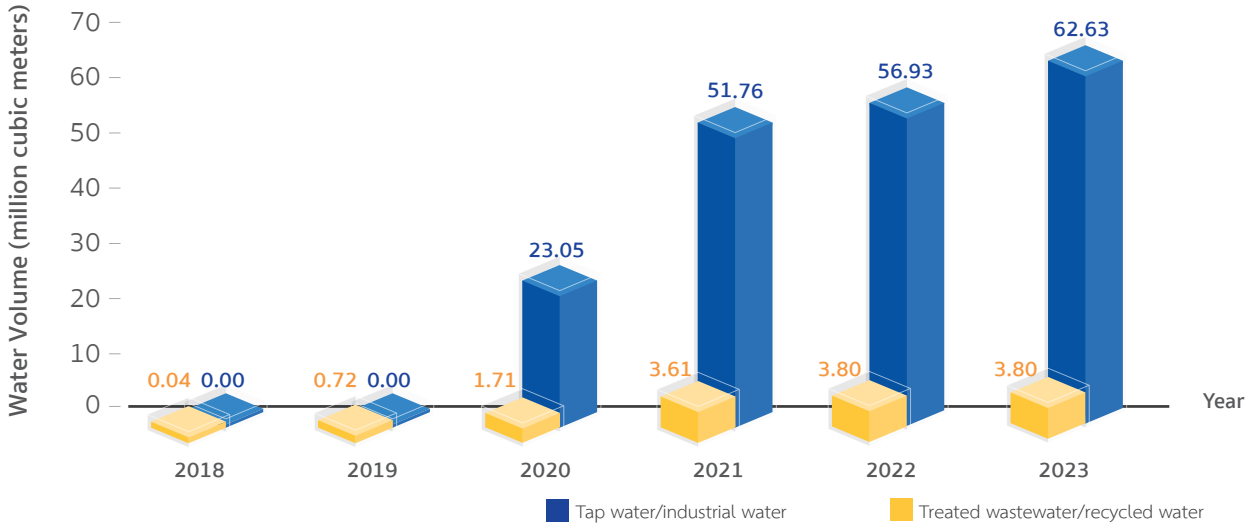


Clarified/Sand Filter Treatment System



It is expected that water demand by type of water service and proportion of water demand by service area from 2020-2024 are as follows:

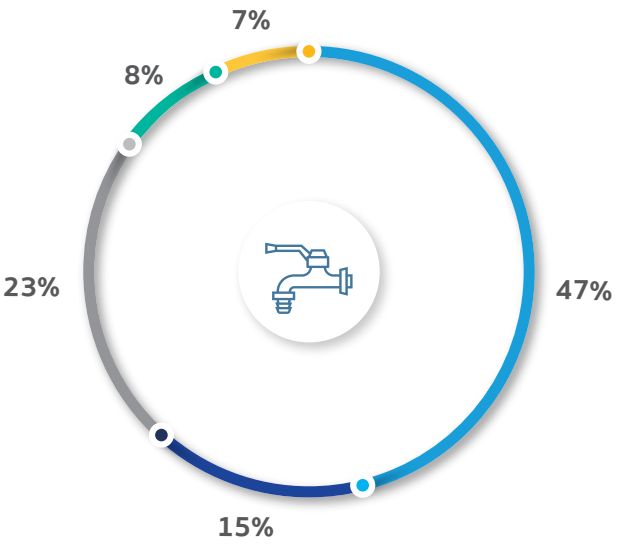
1) Water demand by type of water service



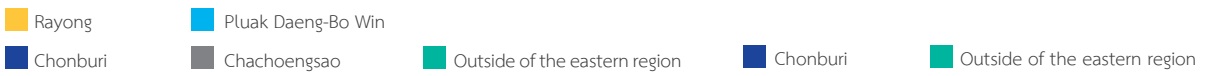
Remark : Such information is projected water demand of customers in future, subject to changes depending on the customers' investment plans.

2) Proportion of demand for tap water and industrial water; and demand for treated wastewater and recycled water by service area

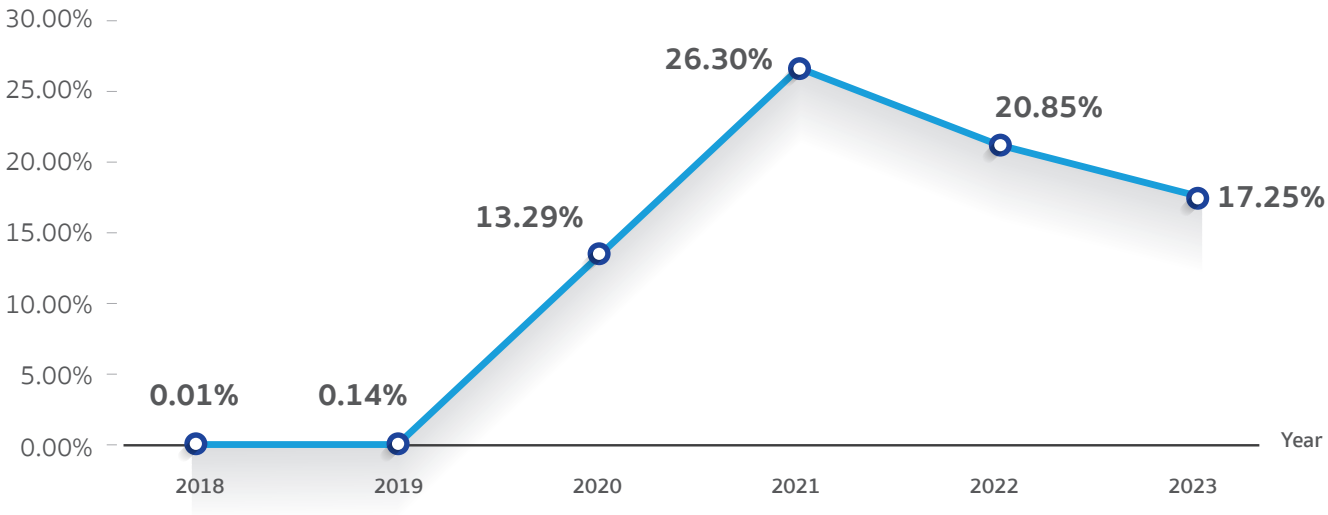
Demand for tap water and industrial water by service area (2019-2024)



Demand for treated wastewater and recycled water by service area (2019-2024)



3) Projected Income Growth from Total Water Solution Business



Remark : Such information is projected operating results in future, subjected to changes depending on the customers' water usage plans. From the above graphs and tables, it was expected that after the Company's provision of total water solution services, the total income over the 5 years (2019-2023) will see an average growth of 13% per year.

Customer Satisfaction Management – Raw Water Business Segment

Service areas, customer groups, and distribution channels of raw water

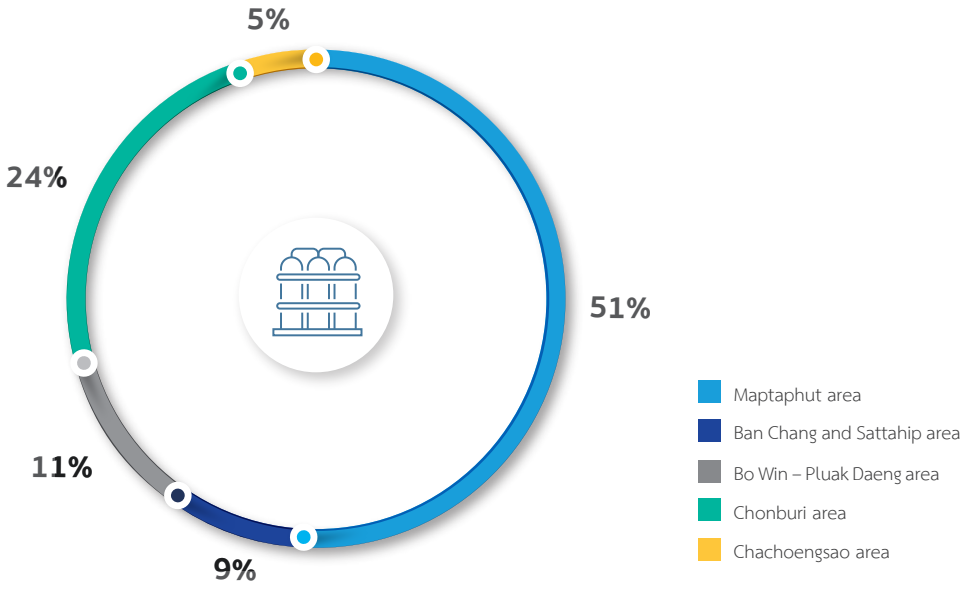
(Disclosure 102-6, 102-43, 102-44)

The Company is the largest business operator in the development of water pipeline system and distribution of raw water to users in the industrial and consumer sectors in the eastern coast region. The Company's strengths include its major water pipeline network system and its pumping and distribution system linking a number of major water sources in the eastern region. The Company's systems are equipped with comprehensive, modern and efficient technology covering the 3 provinces in the eastern coast region. The Company has capacity to supply water according to the local operators' demand at present and in future while other operators are faced with limitations in terms of service areas, water volume, water source stability, and water delivery system.

Customer Satisfaction Management

To live up to our corporate value that focuses on service delivery and customer care as well as to maintain the desired customer satisfaction level, the Company has continuously improved its service provision by listening to customer complaints and suggestions (Voice of Customer) through various channels including telephone, email, the Company's website, site visit during major festivals, and annual satisfaction survey. The data will be compiled, analyzed and subsequently brought to the consideration at the meetings of the Operations & Customer Service Department as well as the management meetings in order to continuously improve service delivery to efficiently respond to needs and requirements of each group of customers.

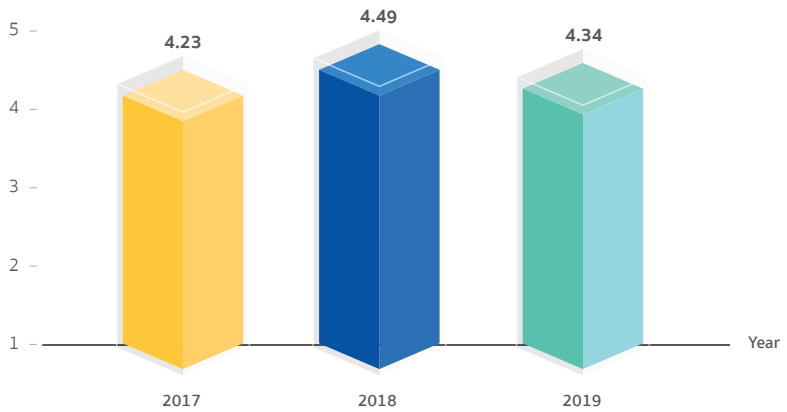
In 2019, the proportion of raw water distribution by service area was as follows:



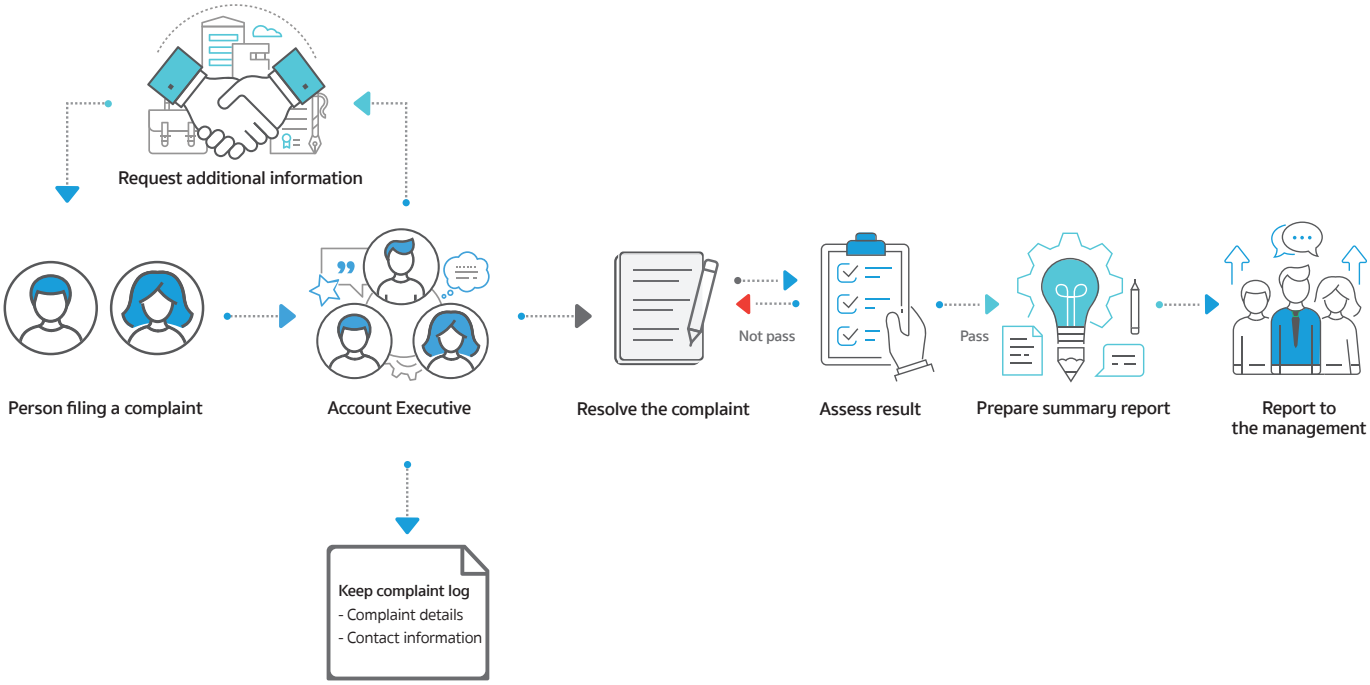
The result of customer satisfaction survey in each service area revealed that the outstanding corporate image in customers' view was in terms of stability and trustworthiness of the organization and expertise in water management.

Regarding service expectations, the areas that customers had the highest expectation were the employees providing the services, the quality of repair and maintenance services, and the disclosure of news and information respectively. However, in 2019, the Company realized that the importance of maintaining customer satisfaction and was committed to constantly improving customer services. The Company also upgraded other services by, for example, improving formats of installation services for water users through expanding its scope of services to reduce costs and expenses of main taining water distribution pipeline systems for the customers. The Company also enhanced types of information and news services by, for example, revamping its online metering system and launching a mobile application to facilitate convenience for water users in monitoring the levels of water received in a consistent and timely manner.

Overall Customer Satisfaction Score: 2017-2019



According to the 2019 customer satisfaction survey, the satisfaction level was slightly lower than the average satisfaction level of the past 3 years of 4.35. The Companies and related parties realized the importance of maintaining the satisfaction level and were committed to constantly improving data provision services (Please refer to the details of the satisfaction level for each aspect 2017-2019 in the Annex.)



Complaint Handling Process

When a customer complaint is received, an Account Executive (AE) will keep a log of the complaint in the customer relations management system, specifying details, complaint category, contact details, and responsible parties. The AE shall then coordinate with persons concerned to identify causes, solutions, and preventive measures to avoid recurrences. Once corrective actions are done, the AE shall provide updates to the customer for customer satisfaction evaluation. The AE shall record the customer satisfaction evaluation result in the customer relations management system before closing the job. A person shall be assigned to prepare a monthly complaint summary report for submission to the management.

Complaint Preventive Measures

In 2018-2019, the Company received no complaints. Nonetheless, the Company paid attention to and realized the importance of the complaint preventive measures. As such, the Company established the complaint handling process and procedures through which types of complaints and respective service requests are specified and responsible working teams are clearly established in order to analyze and identify causes and lay down solution and preventive guidelines. The whole process must be completed within the specified timeframe agreed upon with the customer (Service Level Agreement: SLA) as part of the internal control system regarding correction and prevention of a complaint. Customer satisfaction survey must be conducted after the complaint is resolved. And the summary report shall be submitted to the management for acknowledgement on a monthly basis for further consideration and improvement of efficiency of the complaint handling process on an ongoing basis.

Apart from conducting the customer satisfaction survey and welcoming any complaints, the Company held annual meetings with its customers by inviting the customers to listen to explanations and sharing opinions beneficial to service improvements.

To ensure mutual understanding and build confidence among its customers, in 2019 the Company held a number of meetings with its customers as follows:

Activity	Target Group	Project Objectives/Details
East Water Open House	• New accounts • Future customers (New opportunities) • Interested current customers • Customers within industrial estates (end users)	To introduce the Company to all new accounts/future customers as well as interested persons; to be a channel to disseminate knowledge about management and control of water pumping and distribution with modern technologies; and to foster confidence among future water users.
Education Seminar	• Current customers • Customers within industrial estates (end users)	To report the current water source situation and future trends/situations; the water source quality situation; and the management and resolution/ preventive guidelines to create trust among water users.

In 2019, the Company announced its new water pricing structure. The main objective of such change was to enable water users to plan and manage water usage by matching levels of water received with levels of water required by users each year. This created a balance in the overall water management and reduced the risk of water shortages due to the drought, allowing the Company to manage sufficient and consistent levels of water. The Company focused on the joint, sustainable development of water resources in the long run with its stakeholders.

The Company collaborated with the industrial estate customers and relevant parties in sharing the notification of the new water pricing structure with the water users on 28 December 2018 and the notification was effective on 1 January 2020. In 2019, the Company held meetings to clarify the matter to the customers and relevant parties so that they could understand the main concept, principles and objectives of the structure change. The Company also listened to the customers' comments for further revising its relevant actions. The Company also used the past water usage records of the water users for analyzing and proposing appropriate guidelines for receipt of water to ensure appropriate rates of water charges and highest efficiency.

Customer Satisfaction Management – Tap Water Business Segment

The affiliated companies designed the tap water production systems appropriate to different locations. The design and construction were based on levels of water demand and quality of raw water so as to choose appropriate tap water production systems and ensure that tap water products meet specific quality standards as follows:

- Conventional Water Treatment Plant
- Mobile Plant
- Advanced Water Treatment Plant with Ultra-Filtration (UF) and Reverse Osmosis (RO) filters using Membrane technology in the tap water filtering process.

Summary of Tap Water Production Systems in Different Waterworks Service Providers

Waterworks	Type of Tap Water Production System		
	Conventional	Mobile Plant	Advance Treatment
Chachoengsao	✓	✓	
Bang Pakong	✓	✓	✓
Bo Win	✓	✓	
Nong Kham	✓		
Chonburi		✓	
Rayong	✓	✓	
Sattahip	✓		✓
Koh Lan			✓
Koh Samui			✓
Lakchai		✓	
Ratchaburi		✓	
Nakornsawan	✓	✓	
Hua Ror		✓	

Moreover, the affiliated companies realized the importance of maintaining the highest level of water user satisfaction and taking responsibility y for products and services. Therefore, samples of tap water were randomly collected and sent to outside laboratories registered and certified according to standards of the Ministry of Public Health, the Department of Industrial Works, and the Department of Science Service so as to check the quality of tap water to comply with criteria and standards specified in tap water trading contracts with counterparties, details as follows:

Table of Tap Water Standards Specified by Different Waterworks Service Providers

Water Quality Assurance Standards	Waterworks Service Provider
1 Thai Industrial Standards (TIS)	Chachoengsao, Bang Pakong, Bo Win, Rayong, Sattahip, Koh Samui, Ratchaburi, and Nakornsawan
2 Provincial Waterworks Authority Standards	Bo Win, Nong Kham, Chonburi, Sattahip, Koh Lan, Lakchai, and Hua Ror

Another issue in the annual tap water user satisfaction survey that received high attention was the quality of tap water, especially in terms of cleanliness, clarity, and sedimentation. This is because turbidity and clarity of tap water are physical characteristics that can be easily observed by water users. Therefore, the Company adopted a management approach to handling risks of substandard water quality which can be divided into 2 parts as follows:

- **Production System**

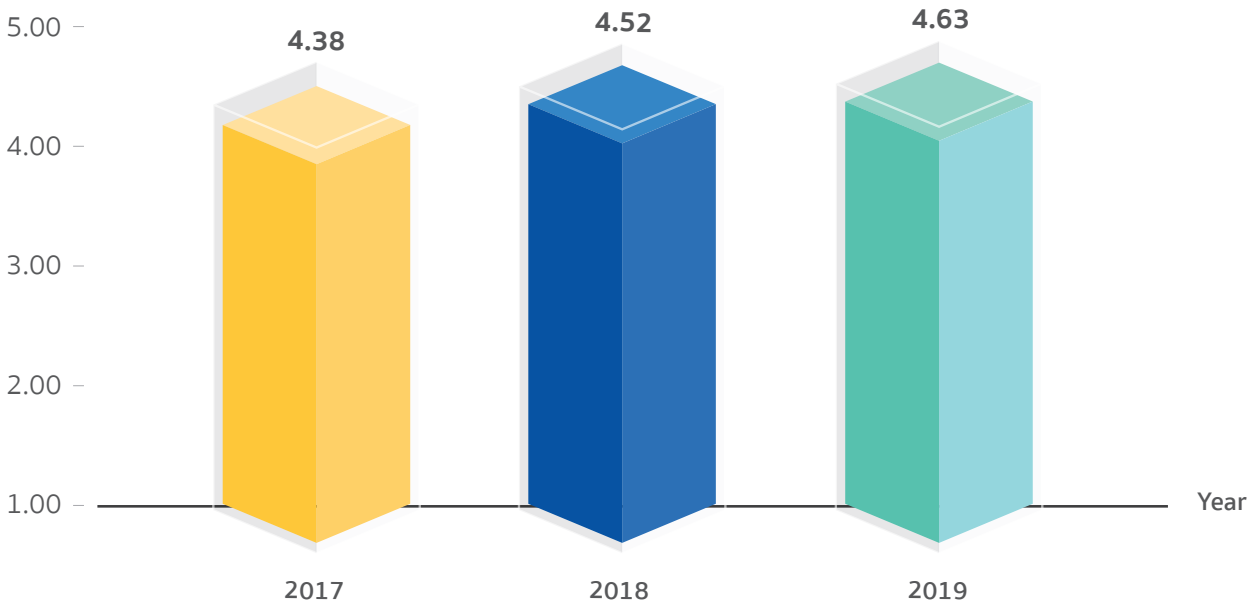
Normally, the employee controlling the production system will monitor the turbidity value of raw water every 2 hours. The chemical dispenser device will automatically be controlled as information of appropriate amounts of chemicals to be dispensed is entered into the computer system. Or, in the case of the high turbidity value of raw water, due to the high water season or the dry season, the turbidity value might exceed a standard level that can be handled by the production system. In this case, the controller will decrease the production capacity to the level that the turbidity value raw water meets the specified quality standard.

- **Water Distribution Pipeline System**

Normally, to maintain the quality of water in the pipeline consistently according to standard requirements, the employee in charge of the water distribution system will regularly remove sediments according to scheduled times or whenever a high value of turbidity is detected, which may be due to pipeline repair works or sediments deposited inside the pipeline. Also, the Company developed an automated water distribution system and expeditiously installed the equipment to cover all the sediment release points in the water distribution system in order to better control turbidity values of tap water in the pipeline.

As the quality of services is one of the top priorities of the affiliated companies, a third party agency is invited to conduct customer satisfaction survey with the water users every year. The opinions and recommendations gathered from the water users will be used as guidelines for further improvement of the quality of services in all aspects to achieve greater efficiency.

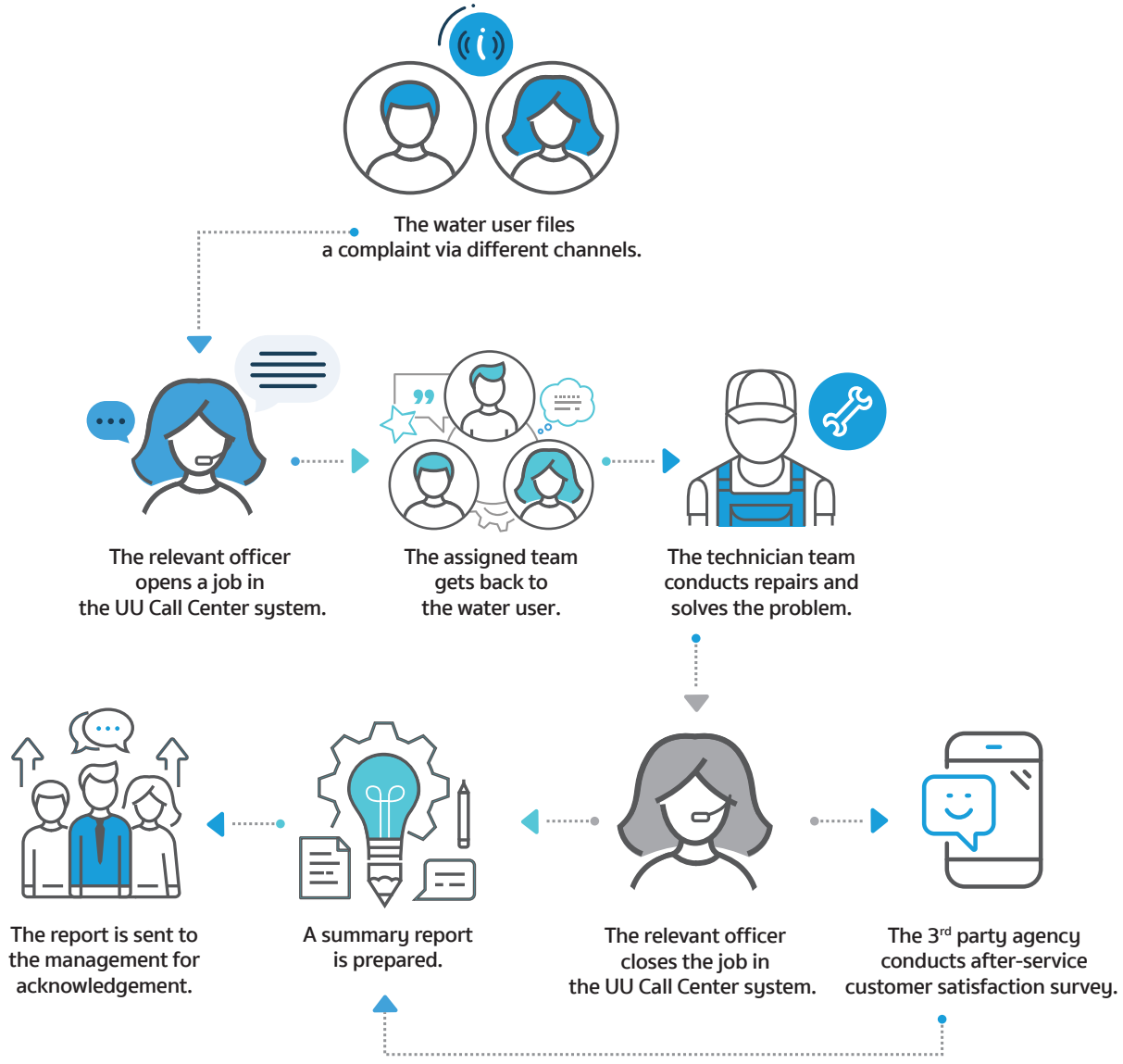
Overall Customer Satisfaction Score: 2017-2019



According to the 2019 customer satisfaction survey, the satisfaction level was higher than that in 2018. The average satisfaction level of the past 3 years was approximately 4.51%. The Company and related parties realized the importance of maintaining the satisfaction level and were committed to constantly improving data provision services. (Please refer to the details of the satisfaction level for each aspect (2017-2019) in the Annex.)

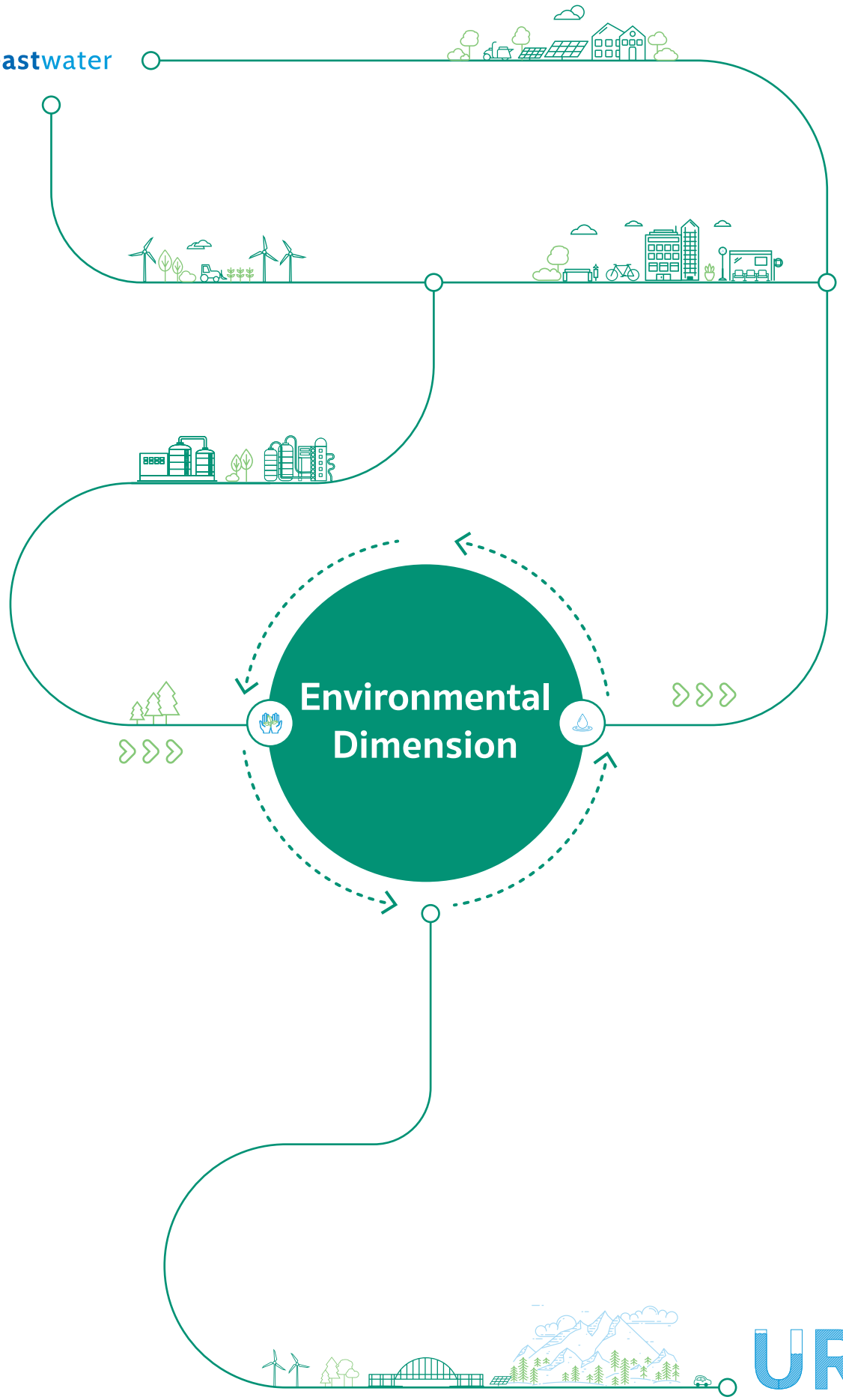
Complaint Handling Process of the Affiliated Companies

The handling of complaints in the waterworks business segment is available through many channels. Consumers can file complaints or problems relating to tap water uses such as through the Head Office's UU Call Center and the Line Application. Once the complaint is received, the company will contact the water user back to resolve the problem according to the specified criteria. After-service customer satisfaction survey will also be conducted.



In 2019, there were a total of 18,327 transactions relating to the provision of services to tap water users. All these transactions were completely resolved. In 2020, there is a plan to handle complaints of water users with faster services. The UU Service Level Agreement (UU SLA) is established and communicated to all employees for acknowledgement and compliance. The agreement is effective from 1 January 2020 onwards. This is to ensure that the customers receive the highest level of satisfaction from the company's services.

eastwater



URD

Responsible Operations

(Disclosure 303-1)

Water management is a collaborative effort between the public and private sectors. As the Company is a leading provider of total water solutions in Thailand, the Company set up a working team to analyze and assess the water situation as well as to analyze water quality and monitor any change in water quality. The team continuously communicates and sends updates on water quality information to the customers to prevent any possible impacts on the customers' operations. The Company also joins hands with the public and private sectors in establishing a Water War Room in the eastern region to jointly forecast weather conditions and water levels in different locations. This is to ensure efficient water management and allocation of sufficient water to support all sectors in an equitable manner.

Joint Water Management

Maptaphut area, Ban Chang and Sattahip area

Most water users in these areas are those in the industrial sector who use water from 3 major reservoirs, i.e. Dok Krai Reservoir, Nong Plalai, and Prasae reservoirs.

Chonburi area and Pluak Daeng – Bo Win area

The area is the country's new strategic line. Most water users in the area are those in the household consumption sector. However, according to the geographical condition, the area has only 2 water reservoirs, Nong Kho and Bang Phra, causing the area to rely on raw water from Nong Plalai and Prasae reservoirs in Rayong through East Water's transmission network.

Chachoengsao area

Most water users in the area are those in the household consumption sector with the Bang Pakong River as the main source of water. However, as Chachoengsao faces saltwater intrusion, some areas suffer from freshwater shortage in the dry season. To ensure year-round water supply, raw water must be purchased from private water sources during the dry season while, during the rainy season, water must be pumped from the Bang Pakong River for temporary storage at the East Water's water reserve pond, Samnak Bok pond, for use during the dry season.

The water sources that the Company manages are surface water that can be pumped up from water sources which can be divided into 2 categories according to the usage, i.e. main water source and reserved water source. (Disclosure 303-3)

- **Main water source** means water sources that are allocated by the Royal Irrigation Department including Nong Kho, Dok Krai, Nong Plalai, Prasae and Bang Phra reservoirs. This also includes other sources of water that can be pumped out for use each year. The water supply comes from the seasonal runoff at sources like the Bang Pakong River and other private water sources.
- **Reserved water source** means the water sources that provide backup support for the main water sources. The water must be reserved beforehand for use upon low water levels in the main sources or water shortages. The reserved water sources are Samnak Bok pond, Chachoengsao pond, and Bang Phra reservoir. (Reserve water)

Regarding water sources allocated by the Royal Irrigation Department, each year the Irrigation Office 9 holds a meeting of non-agricultural water users (household and industrial consumers) to agree on water allocation for permitted users. Annual water allocation round starts in November and lasts until October of the following year. During the water allocation period, meetings will be held to monitor water consumption, which varies with the water situation, and make additional water allocation when there is additional inflow of water to the reservoirs.

Regarding water pumping from the Bang Pakong River, the Company will only pump water in the rainy season. During the past year, water pumping was carried out from July – December 2019 and the water was distributed mainly to household and industrial consumers in Chachoengsao with part of it being diverted to Bang Phra reservoir and Samnak Bok pond as reserved supply for water users in Chachoengsao and Chonburi areas in the dry season.

Water management in 2019: 2019 was the year in which the Company was faced with the drought situation. The water supply in the major reservoirs of the Royal Irrigation Department, the key water supply sources of the Company, was limited. Hence, the Company joined hands with all sectors in preparing 7 preventive and corrective measures against the drought spell as follows: 1) Seeking collaboration from all sectors to reduce the water usage level by 10%, 2) Acquiring additional water sources from private ponds in Chonburi and Chachoengsao, 3) Preparing the reserved water pumping system, 4) Enhancing the capacity of the Chachoengsao Pump Station (Klong Kuen) to pump water from the Bang Pakong River, 5) Linking the pipelines between the Prasae reservoir and the Klong Yai reservoir; and between the Prasae reservoir and the Nong Plalai reservoir, 6) Increasing the water distributed through the pipelines between Nong Plalai and Nong Kho, and 7) Pumping water from Rayong River to the Thap Ma Raw Water Reserve pond.

The total amount of water pumped up for management during 2019 (for use in 2018-2019) was 334.78 million cubic meters, higher than the previous year's volume, due to the increasing levels of water used by the waterworks customers in Chonburi. The total volume of water pumped from main water sources could be categorized as follows:

Source: Overall water risk at https://www.wri.org/our-work/project/aqueduct/

Table showing volume of water from main water sources managed by the Company in 2019 (Disclosure 303-5)

Water Source	Allocated water (as per permit) 10^3 Million liters	Pumped Water (2019) 10^3 Million liters	Total Dissoloved Solid (≤ 1,000 mg./liter) 10^3 Million liters	Total Dissoloved Solid (> 1,000 mg./liter) 10^3 Million liters
1. Prasae Reservoir	107.00	74.91	74.91	-
2. Nong Plalai Reservoir*	120.00	145.61	145.61	-
3. Dok Krai Reservoir	116.00	68.36	68.36	-
4. Bang Phra Reservoir	8.00	5.64	5.64	-
5. Nong Kho Reservoir	16.70	13.02	13.02	-
6. Bang Pakong River (Water Stress)	27.00	14.96	14.96	-
7. Private Water Sources (Water Stress)	-	12.02	12.02	-
8. Rainwater from Samnak Bok Pond	-	0.26	0.26	-
Total	394.70	334.78	334.78	-

(Details of the table showing volume of water from main water sources managed by the Company in 2018 – 2019 are in Annex.)

Remark : * The volume of water pumped from Nong Plalai reservoir was higher than the permitted limit due to the low water level in Dok Krai reservoir and the need to reduce the water used there and to increase the level of water in Nong Plalai reservoir instead. However, the total pumped water in 2019 did not exceed the permitted limit.

Responsibility for changes in water source quality

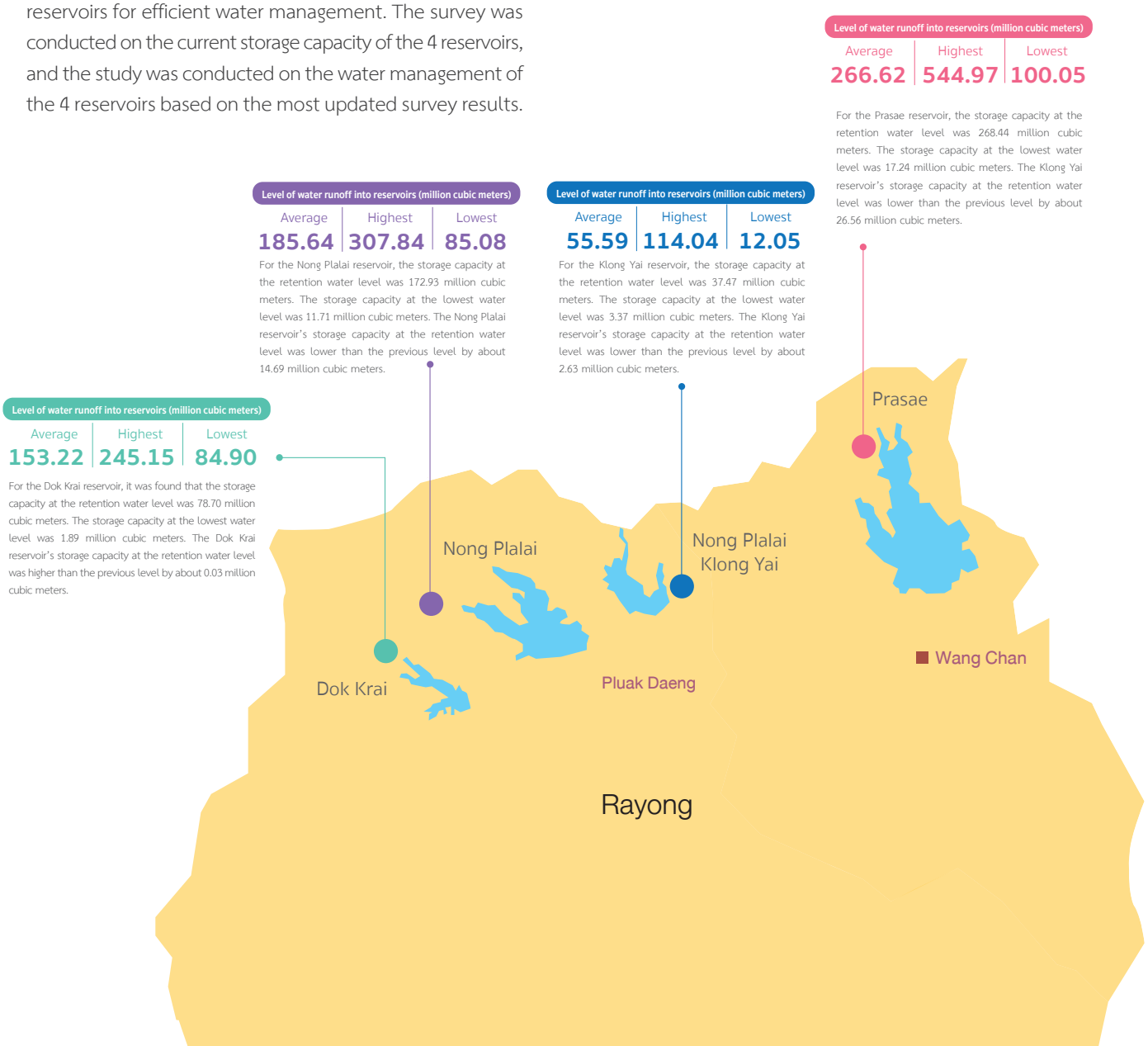
(Disclosure 303-2)

At present, the raw water sources in Rayong consist of Dok Krai, Nong Plalai, Klong Yai, and Prasae reservoirs with the total water storage capacity of 570 million cubic meters. Those reservoirs serve as major raw water sources for the development of the EEC. The Company uses water from both natural run-off in the reservoirs and the nearby water sources with systematic water management. The actual water storage information plays a critical role in efficient water management, especially during the low water period, as there must be water management planning with highly accurate details to prevent any impacts on water usage activities. Also, it is very important to increase the current water storage capacity to a higher level.

The Company, in collaboration with Kasetsart University, conducted the project to study and improve the capacity curve of the Dok Krai, Nong Plalai, Klong Yai, and Prasae reservoirs for efficient water management. The survey was conducted on the current storage capacity of the 4 reservoirs, and the study was conducted on the water management of the 4 reservoirs based on the most updated survey results.

• Comparative study on the capacity curve of the reservoirs
Based on the real-time kinematic survey (RTK) on the geographical conditions of the reservoirs, the storage capacity of the reservoirs at different levels was calculated and the new capacity curve was derived and compared with the existing capacity curve.

• Study on Inflow of Capital Water into Reservoirs
The study on the inflow of capital water into the reservoirs included the analysis of the monthly run-off amounts for the past 30 years from 1987-2016 of the 4 reservoirs and the location important to additional water management, the area of Ban Khai Weir. The study also included the analysis of the daily run-off amounts by using the NAM Model.



• Study on Water Management Guidelines

The study on the water management guidelines of the 4 reservoirs covered a combination of the newly surveyed storage capacity and the diversion of water between reservoirs using pipelines and canals in order to meet the needs of water users in various activities and ensure the highest benefit from water management. The study was based on the guidelines on how to maintain a balance in water uses and the use of criteria for controlling individual reservoirs as tools for water management. The study on the balance of a water source system is to understand the sufficiency of the current water supply and the level of water required for various activities. A number of factors have to be jointly considered, including the amounts of natural water inflow into each reservoir under different scenarios, the water diversion capacity between water sources, the water demand level, the capacity of the water pipeline system, and the characteristics of the reservoir, in order to study the water management guidelines for each particular reservoir. This is to ensure the best interests in terms of water source security based on acceptable risk levels. Consideration shall also be taken into the water storage level based on the following 2 rules:

1. Upper Rule Curve (URC): This is to maintain water at the level with the minimal risk of floods. Water will be released from the reservoir during the high water period at the beginning of the rainy season and will be stored in the reservoir to its full capacity during the end of the rainy season.
2. Lower Rule Curve (LRC): This is to maintain water at the level not lower than the lower rule curve to provide a guarantee of agricultural water during the dry season.

The Company used various sources of information in analyzing and studying management guidelines for the reservoirs and the overall water pipeline system. Uses of water from the reservoirs were subjected to certain limitations such as the water amount allowed to be used, the sizes of the water pipelines, and the permitted times to pump water from the natural sources. Also, there were uncertainties in terms of the level of natural water supply, the level of water stored in the reservoir, and the appropriate expenses for water pumping and distribution. Thus, the Company considered the following factors in determining suitable guidelines for different scenarios to achieve more efficient resource management.

1) Water level/volume of each reservoir
2) The capacity of the systems to link water sources to water pumping and distribution systems
3) The distance between the water usage point and the water supply source
4) Energy costs relating to diversion, pumping and distribution of water at each pump station

Climate Change Response

Throughout the years of its operations, the Company realized the importance of climate change and fluctuating weather conditions around the world as well as the increasingly severe natural disasters. Those events affected the water level in each area and the ability to provide sufficient water to all sectors. Therefore, the Company set up measures to respond to climate change through ensuring stability of its water pipeline network system to increase confidence among all sectors in water management and water sufficiency. The Company also adopted the science of water usage to raise awareness about how to make best use of water in a sufficient and consistent manner. Customers andcommunities were invited to take part in campaigns and collaborative efforts regarding water usage.

With the growing severity of climate change each year, the natural phenomenon has witnessed drastic changes. This has affected the balance of the life cycle of water which is a crucial mechanism of every life in the world. As a result, many areas have been severely inundated while many areas have been faced with the drought situation due to increasing temperatures. Therefore, as a leading provider of water management services in Thailand, the Company analyzed, developed and managed water sources and water usage in its service areas as follows:

Creation of Stability of the Water Pipeline Network System

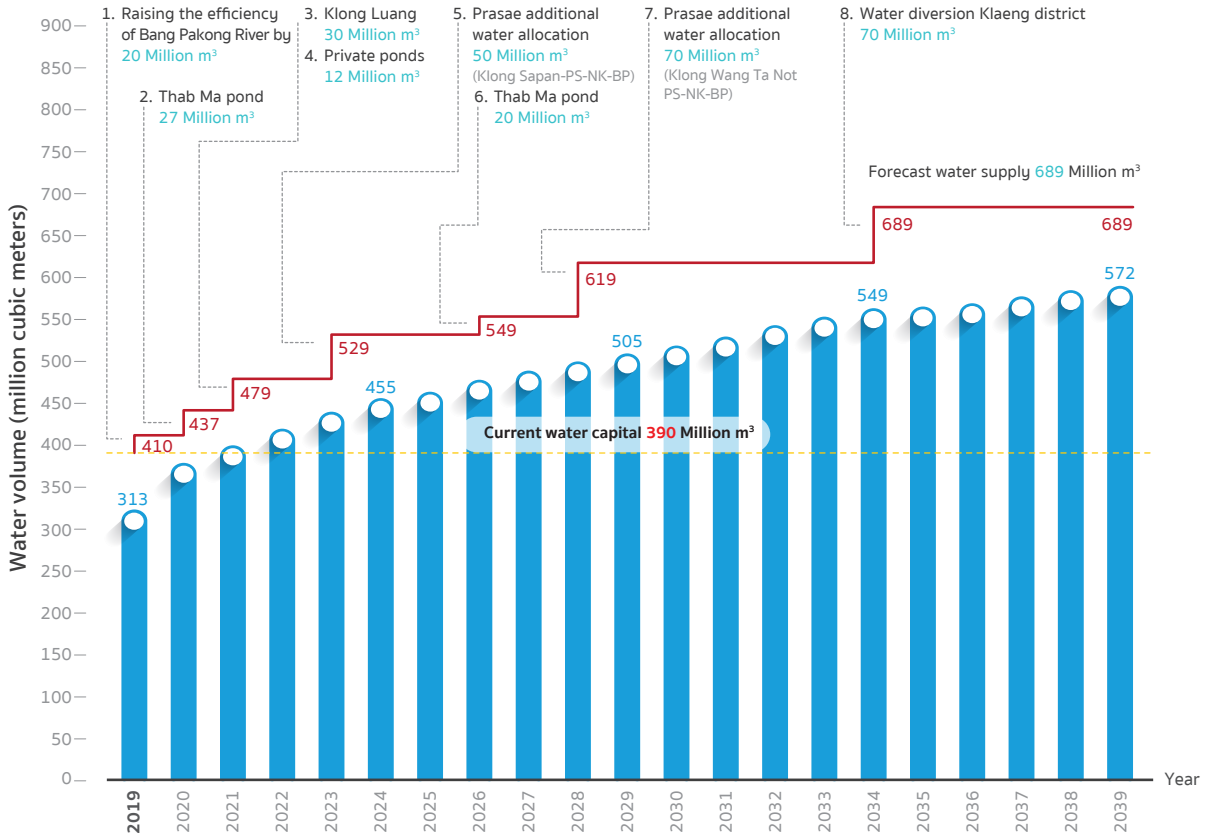
In creating stability of the water pipeline network system (water grid) to ensure sufficient water supply in the long term, the Company has referred to the study on climate forecast in the eastern region by the Office of Natural Resources and Environmental Policy and Planning (ONEP) using the MRI GCM model developed by the Meteorological Research Institute of Japan and the climate change data sets obtained from the climate change model. The historical data of daily rainfall and temperature from the Thai Meteorological Department and the Royal Irrigation Department (1979 – 2006) and the daily rainfall, temperature, and wind speed from the model (1979 – 2006, 2015 – 2039, 2075 – 2099) were used to analyze the hotspots. According to the study:

- The risk of flood in the near future is less than the base year while the risk in the far future is higher than that in the near future.
- The risk of drought in the near future is higher than the base year and the risk in the far future is higher than that in the near future (Source: http://www.onep.go.th/climatechange/index.php/about-east-5). To cope with the potential drought in the eastern region, the Company has established a plan to enhance stability of the water transmission network which consists of 3 components:

- Raising water supply capability
- Developing water grid
- Collaborating with various agencies involved and making weather forecasts

1 Raising water supply capability: The Company has established short, medium, and long-term development plans for sources of water supply to ensure stability of raw water sources to build customer confidence in the next 20 years. Adjustments were made to the previous year's plans to keep up with the current situation and to ensure that water users would not be affected. Details of the plans are as shown below.

Diagram showing water supply development plan and water demand forecast for the next 20 years



2 Developing Water Grid: The Company has continuously enhanced the capability of its water grid. In 2019, the Company continued its efforts in the 4 projects carried on from 2018 and the progress was as follows:

(1) **Energy and Water Resources Management System Project Phase II (EWMS Phase II)** To study and install necessary measuring equipment to support EWMS in water management and link data of water sources from the Royal Irrigation Department to the Company's data in order to monitor and more accurately forecast the water situations in the eastern region. The project was substantially completed.

(2) **Construction of the 2nd Nong Plalai - Nong Kho raw water pipeline** To respond to water demand in Chonburi and Pluak Daeng - Bo Win areas and prepare for possible waters shortages in the future. The pipeline has a transmission capacity of 60 million cubic meters of water per year. In 2019, the pumping station improvement program was conducted and was expected to complete in 2020.

(3) **Enhancement of pumping capacity from the Bang Pakong river** To raise efficiency of the water pumping system to pump water from the Bang Pakong River to the Bang Phra reservoir by 20 million cubic meters per year to prepare for future water demand in Chachoengsao and Chonburi. The project is expected to complete in 2020.

(4) **Construction of the raw water pipeline in the Khlong Luang Reservoir-Chonburi** To prepare for future water demand in Chonburi and Pluak Daeng – Bo Win and possible water shortages in the future. The pipeline has a transmission capacity of 20 million cubic meters per year. The pipeline installation process is being undertaken and the project is expected to complete in 2021.

3 Collaboration and weather forecast: To ensure that the Company's water management plan is appropriate and in line with the current situations, the Company has worked closely with relevant agencies such as the Royal Irrigation Department, the Water War Room, the Federation of Thai Industries, the Eastern Economic Corridor Office (EEC), the Thai Meteorological Department, and the Department of Royal Rainmaking and Agricultural Aviation.

Water loss control is always one of the priorities of the Company as we are committed to obtaining maximum benefits from the water pumping that requires both energy and water resources in order to efficiently deliver water to our customers.

With that goal in mind, in 2019, the Company was able to control the volume of non-revenue water (NRW) at 2.93% (Disclosure 306-1) of the total water pumped based on the survey on the customers' meters. In addition, previously, the water meter system capability was compromised as the actual level of water received did not match the designed level of water received. Therefore, the Company installed a new water meter system with more accuracy of readings in times of the largest discrepancy between the highest and lowest levels of water received (R500) as per ISO 4064 standards.

In 2020, the Company will implement its new water pricing structure to accommodate customers' water needs. The new structure enables water users to take part in managing water usage with the Company. Under the new measure, the levels of water required by users each year will match the levels of water and reserved water to be sufficiently provided by the Company. This new structure helps raise consumers' awareness about water usage and reduce the oversupply of water which causes inefficient water management in terms of allocation of water resources and management issues.

$$\% \text{ NRW} = \frac{\text{Volume of pumped water for distribution - Volume of distributed water - Volume of stored water}}{\text{volume of pumped water for distribution}} \times 100$$

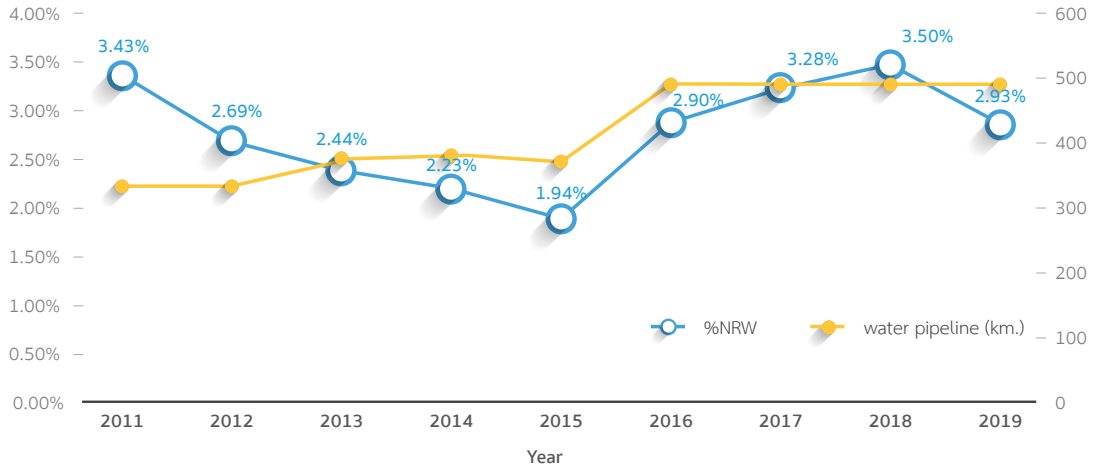


Table showing volume of pumped water in 2019

Month	Volume of pumped water (m^3)*	Volume of pumped water for distribution (m^3)**	Volume of distributed water (m^3)***	Volume of stored water measured (m^3)	Water Loss (m^3)	% NRW
January	25,078,932	25,078,932	23,991,305	-	1,087,627	4.34
Febuary	25,064,002	25,064,002	24,211,396	-	852,606	3.40
March	29,061,885	29,061,885	29,147,048	51,671	(136,834)	-0.47
Apirl	30,463,094	28,460,244	27,604,162	-	856,082	3.01
May	33,761,832	28,644,878	27,693,493	-	951,385	3.32
June	31,376,493	25,277,852	24,586,241	58,890	632,721	2.50
July	32,407,071	27,642,746	26,665,369	438,433	538,944	1.95
August	34,438,107	28,875,157	27,195,778	875,616	803,763	2.78
September	34,440,832	28,158,191	24,233,710	3,144,377	780,104	2.77
October	33,848,467	28,855,786	24,979,113	2,740,358	1,136,315	3.94
November	31,854,038	28,543,212	25,367,608	1,918,102	1,257,502	4.41
December	32,354,386	28,771,423	27,739,394	63,544	968,485	3.37
Total	**374,149,139**	**332,434,308**	**313,414,617**	**9,290,991**	**9,728,700**	**2.93**

Remarks : * The volume of pumped water in the entire system (for distribution, for water reserve, and for diversion)
** The volume of pumped water for distribution refers to the volume of pumped water for distribution and water reserve, exclusive of the pumped water for diversion.
*** The volume of distributed water refers to the volume of water sold to the customers.

The Company has continued its commitment to establish stability and reliability of the water pumping and distribution system and set the target that there shall be no damage to the machinery and equipment to the level that causes disruption to the system and there shall be no suspension of water distribution from the water grid. Also, the temporary shutdown for maintenance is capped at 8 hours each time provided that Class A machinery or equipment must not experience a shutdown.

15 Pump Stations

- Klong Kuen Reserve Pond Pump Station
- Chachoengsao Pump Station
- Bang Pakong Pump Station
- Private Pond Pump Station
- Samnak Bok Pressure Boosting Station
- Samnak Bok Pump Station
- Nong Kho Pump Station
- Bang Phra Pump Station
- Dok Krai Pump Station
- Maptaphut Pump Station
- Nong Plalai 1 Pump Station
- Nong Plalai 2 Pump Station
- Nong Plalai 3 Pump Station
- Nong Plalai Pressure Boosting Station
- Prasae Pump Station

Electricity consumption is related directly to the volume of water pumped through the 491.8-km. water grid covering 15 pump stations and 62 power and metering stations.

The Company continued to implement energy conservation projects covering its core and enabling processes to save energy and increase energy consumption efficiency organization-wide through the setup of the Energy Management Working Group. This not only helped manage costs and expenses for the organization, but also reduced the "climate change" problems to a certain level. Although the Company's core processes did not directly affect GHG releases, there were other activities with indirect impacts such as electricity usage, paper usage, usage of coolants in air conditioning systems, etc. The energy conservation efforts covered the following operating sites:

1 Eight Pump Stations Registered as Controlled Factories

Nong Plalai Pump Station, Dok Krai Pump Station, Nong Plalai Pressure Boosting Station, Bang Pakong Pump Station, and Chachoengsao Pump Station (In 2018, there were new 3 pump stations registered as controlled factories, namely Bang Phra Pump Station, Maptaphut Pump Station, and Samnak Bok Pump Station)

2 One Controlled Building

The building refers to the head office. In this regard, each year's energy conservation target will be set up based on previous year's energy conservation performance evaluation results. The new target shall be a further reduction in the energy consumption at the organization, production or service, and device levels. The factors to be considered shall include levels of energy loss realized and improvement possibilities.

3 60 Power Stations

4 13 Tap Water Production Stations of Universal Utilities PCL. (UU)

Summary of Operations of Energy Consumption Efficiency Enhancement Projects in 2019 (Disclosure 302-3, 302-4)

1 One energy conservation program was implemented at the East Water building as follows:

The Chiller Plant Management System (CPMS) program was implemented at the Chiller room on the 9th floor of the East Water building to reduce electricity usage. Normally, the East Water building uses the chiller system to cool down the internal environment of the building. There are 4 chillers, consisting of three 350-TR chillers (each one operating alternately) and one 175-TR chiller (operating every day). The total chillers' operating hours are from 6:00 hours to 17:30 hours, or 11.50 hours per day, 243 days per year. Based on the survey, the air conditioning system consumed the highest proportion of electricity. Thus, the Energy Management Working Group analyzed the energy consumption of the air conditioning system to consider further improvements within the building by installing the CPMS for use as a tool for analysis. The system involved the collection of daily and weekly data sets for analysis of energy costs for determination of energy saving measures. The program was implemented from March-April 2019. The electricity measurement results were as follows:

Measurement of electricity before the program:

Electricity used before the program = 740,539.73 kWh/y

Electricity costs before the program = 740,539.73 kWh/y x 4.16 baht/kWh
= 3,080,645.28 baht/y

Measurement of electricity after the program

Electricity used after the program = 640,438.53 kWh/y

Electricity costs after the program = 40,438.53 kWh/y x 4.16 baht/kWh
= 2,664,224.27 baht/y

The said energy saving measure led to an electricity energy saving of approximately 100,101.20 kWh/y, accounting for 49,349.90 kg-CO_2/y, or 4.44% of the total electricity energy of the building. (Details are as per Annex.)

2 There were 3 main efficient water management measures as follows:

2.1 Future water demand of customers is assessed through a monthly rolling plan which specifies the water demand in the next 12 months. The information from the plan will be used for water allocation planning as appropriate. In 2020, the Company announced its new water pricing structure. The new structure is expected to lead to the customers' more consistent patterns of water usage. This will result in more energy consumption efficiency and less peak demand for electricity.

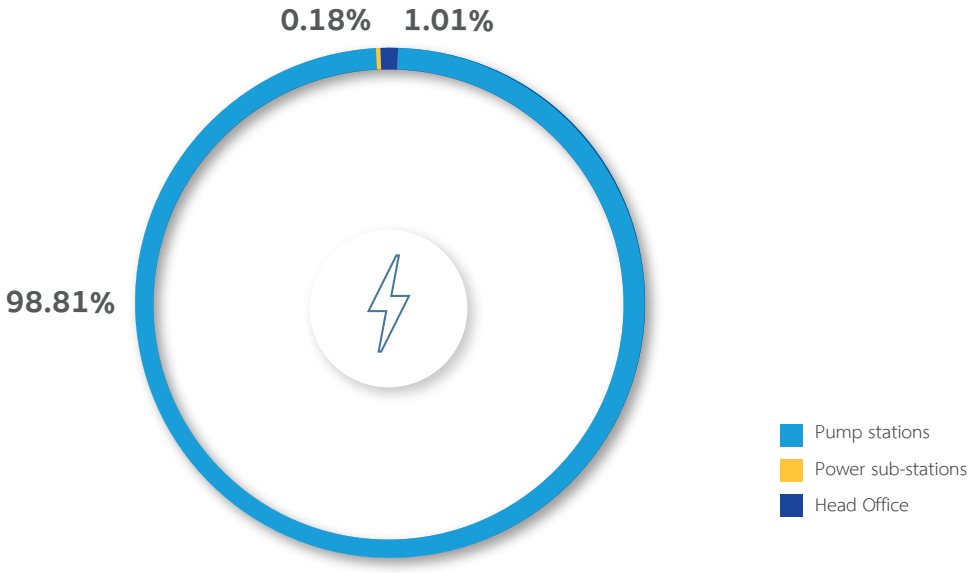
2.2 In terms of water source management, once the information on water demand from the rolling plan is received, the Company will be able to plan uses of water from relevant water sources to maximum benefit.

2.3 Regarding water pumping management, systems and pressures shall be adjusted or tuned to appropriate levels to attain maximum efficiency of pump stations.

In 2020, the Company has a series of energy conservation and innovation plans as follows:

1. An energy-saving measure to install a solar rooftop system on the East Water building rooftop
2. A project to install solar floating panels at the Maptaphut pond with the capacity of 200 kW

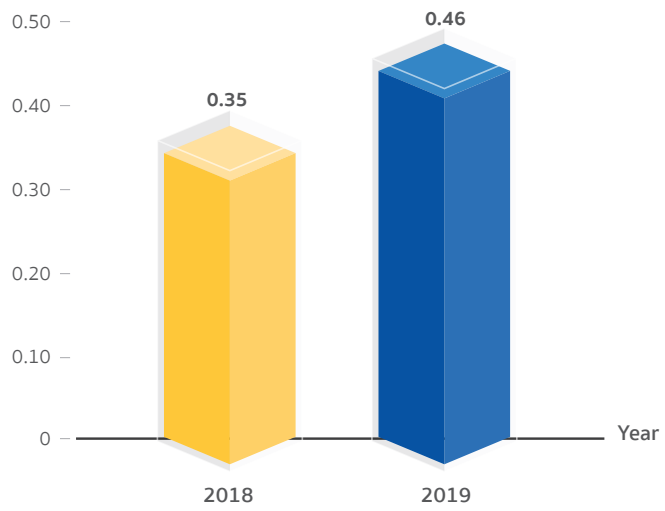
Energy Consumption in 2019 (kWh)



In 2019, the Company consumed only electricity energy of **175,961,597 kWh** which can be divided as follows: 1) Energy consumed by the pump stations **173,868,983 kWh**, 2) Energy consumed by the Head Office's East Water building **1,775,289 kWh** and 3) Energy consumed by power sub-stations along the water pipeline of the Company **317,325 kWh**. The total energy consumption increased by **72,602,554 kWh** or 70.24% over the last year due to the increasing amount of water pumped for distribution. The rate of energy consumption per water unit of 0.46 kWh/m^3, in 2019 was higher than that in 2018 by around 32.30%.

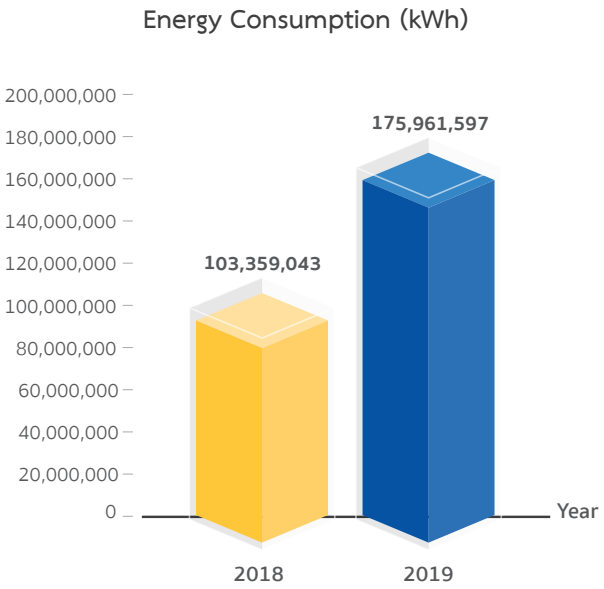
The said electricity consumption was comparable to the CO_2 emissions of 86,749 tons., so the CO_2 emissions In 2019, was higher than that in 2018 by around 66.86%

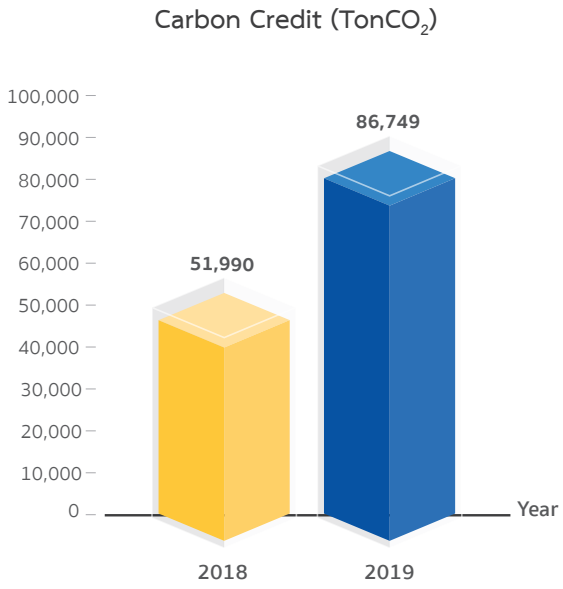
Energy consumption per unit (kWh/m^3)



Remark : This is calculated from the energy consumed at pump stations compared to the volume of pumped water. The source of information is from the table showing the volume of water pumped by the Company in 2019.

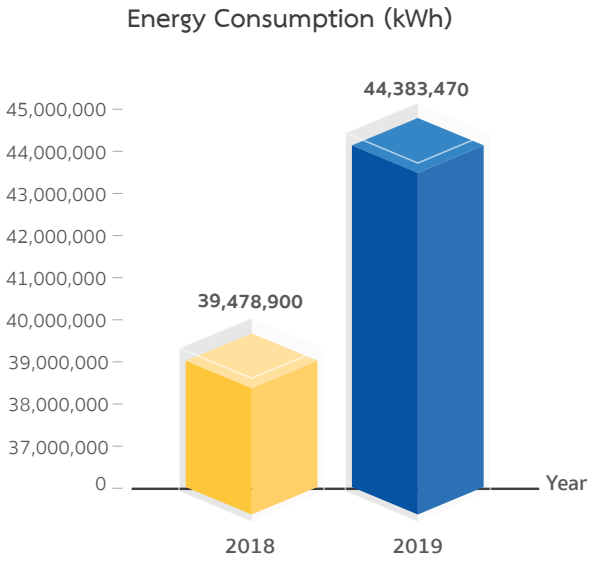
Comparison of energy consumption and greenhouse gas emissions by the Company (2018 and 2019)

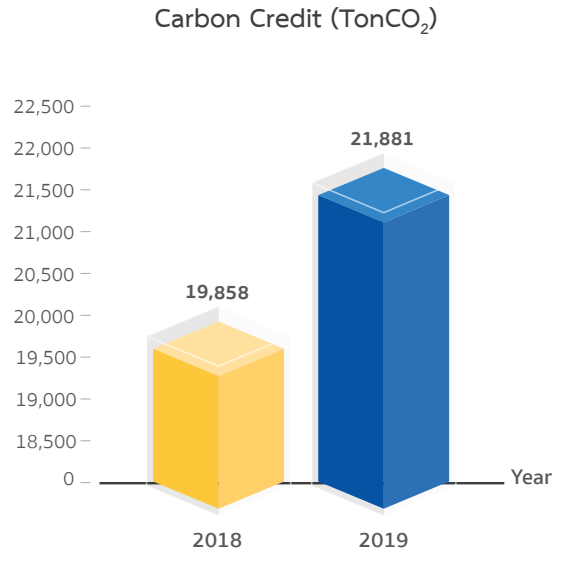




In 2019, the affiliated companies consumed only electricity energy of 44,383,470 kWh. The total energy consumption increased by 4,904,571 kWh or 12.00% over the last year.

The said electricity consumption was comparable to the CO_2 emissions of 21,881 tons. In 2019, the CO_2 emissions totaled 10.19% higher than the last year.





Calculation method for greenhouse gas emissions

(Disclosure 305-2)

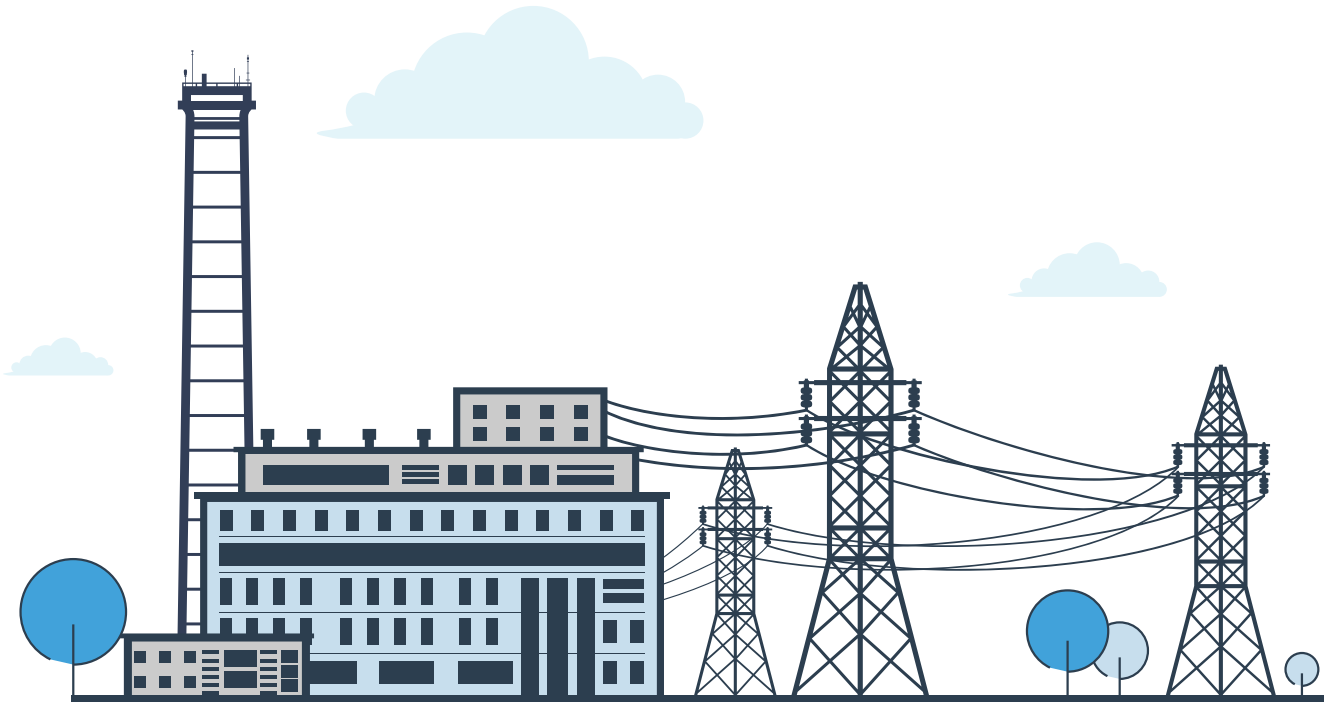
**GHG emissions = Activity Data (kWh) X Emission Factor
Electricity emission factor = 0.493 kg-CO_2/kWh

Energy used for water pumping + energy used at head office during 2019 + energy used at power sub-stations + affiliated companies

GHG = [(water pump station) 173,868,983 kWh + (pumping stations with separate meters) 317,325 kWh + (head office) 1,775,289 kWh + (affiliated companies) 44,383,470] x 0.493 kg-CO_2/kWh
= 108,630,118 kg-CO_2/kWh
= 108,630 Ton-CO_2/kWh

Definitions

"Pump stations" refers to 15 main pump stations of the Company.
"Pump stations with separate meters" refers to 62 power and metering sub-stations.
"Head Office" refers to the electricity consumption at the Head Office of the Company Group
"Affiliated companies" refers to the electricity consumption of the tap water production systems of the 13 waterworks entities.
This is based on the Emission Factor Calculation by the Office of Energy Policy and Planning (EPPO), Ministry of Energy at http://www.eppo.go.th/index.php/en/en-energystatistics/co2-statistic?orders[publishUp]=publishUp&issearch=1



URD Campaign

As a preeminent leader of Thailand's water management, the Company has been committed to operating business under the vision of "To be the leader in total water solution of the country." To live up to such vision, the Company created and developed ideas to invite all sectors to take part in protecting water resources under a program called "Sakit Thai, Sai Jai Nam" (Water is our responsibility.) The program deals with sustainable development practical guidelines and measures to alleviate potential water crisis problems in the future. The aim of the program is to encourage people to appreciate values of water and mobilize all sectors' efforts to propose new practices of water usage via a communication tool called **"URD."**

Therefore, the URD is the concept designed to be a practical guideline for all parties to apply in daily lives, whether they be in the household, agricultural or industrial sector. The program is to change people's water consumption behaviors, promote water resource sustainability, and alleviate water crisis problems in various aspects. There are three practices, "Useful," "Reserve," and "Detect."

Useful : To make best use of water to promote sustainable water usage by applying the principles of "reduce," "reuse," and "recycle" (U)

Reserve : To carefully allocate and reserve water resources to ensure self-reliance and sufficiency (R)

Detect : To detect and observe one's own water usage behaviors consistently (D)

Tap Water Consumption at East Water (Disclosure 303-3)

In addition to the efforts to promote security of water capital through the concept of inviting every sector to join hands in protecting water sources, the Company placed importance on the economical use of water in the office building through campaigns to encourage employees to make good use of water and appreciate its value.

In 2019, the Company's average monthly consumption of tap water was 2,262.25 thousand liters. The main sources of water supply were from the Metropolitan Waterworks Authority (MWA) and the Provincial Waterworks Authority (PWA.) Details of water consumption by geographical location are as follows:

Location	Water Supplier	Average Water Usage (10^3 liters/month)	Total Water Usage (10^3 liters)
East Water Head Office[1]	MWA.	1,971.33	23,656.00
Operations Office[2]	PWA.	60.00	720.00
20 Pump stations[3]	PWA.	228.42	2,741.00
Staff Residence[4]	PWA.	2.50	30.00
Total		**2,262.25**	**27,147.00**

Remark :

1 Refers to water usage in the Head Office (18th, 22nd - 26th Floors) and all common areas.

2 Refers to water usage at Rayong Operations Center and Laem Chabang Office. The water meter at Chachoengsao Office is shared with Chachoengsao Pump Station and other offices in the area.

3 Refers to water usage at 6 pump stations supplied by PWA. The Company produced tap water at 8 pump stations by using raw water considered NRW. These pump stations are Nong Kho Station, Prasae Stations 1-2, Nong Plalai Stations 1-3, Hup Bon Water Storage Station, and Nong Plalai Pressure Boosting Station. The remaining stations do not have tap water supply.

4 Refers to water usage at Executive Residence at Rayong Operations Center. The residence at Chachoengsao Water Tank shares the water meter with Chachoengsao Pump Station. For other residences, the Company produced tap water by using raw water considered NRW.

Environmental Innovation

Water Management Innovation Pipeline Risk Prioritization

The results from the study under the Pipeline Risk Prioritization project revealed that the raw water pipeline with a medium risk level was 20.83 km. long and the one with a high risk level was 22.41 km.

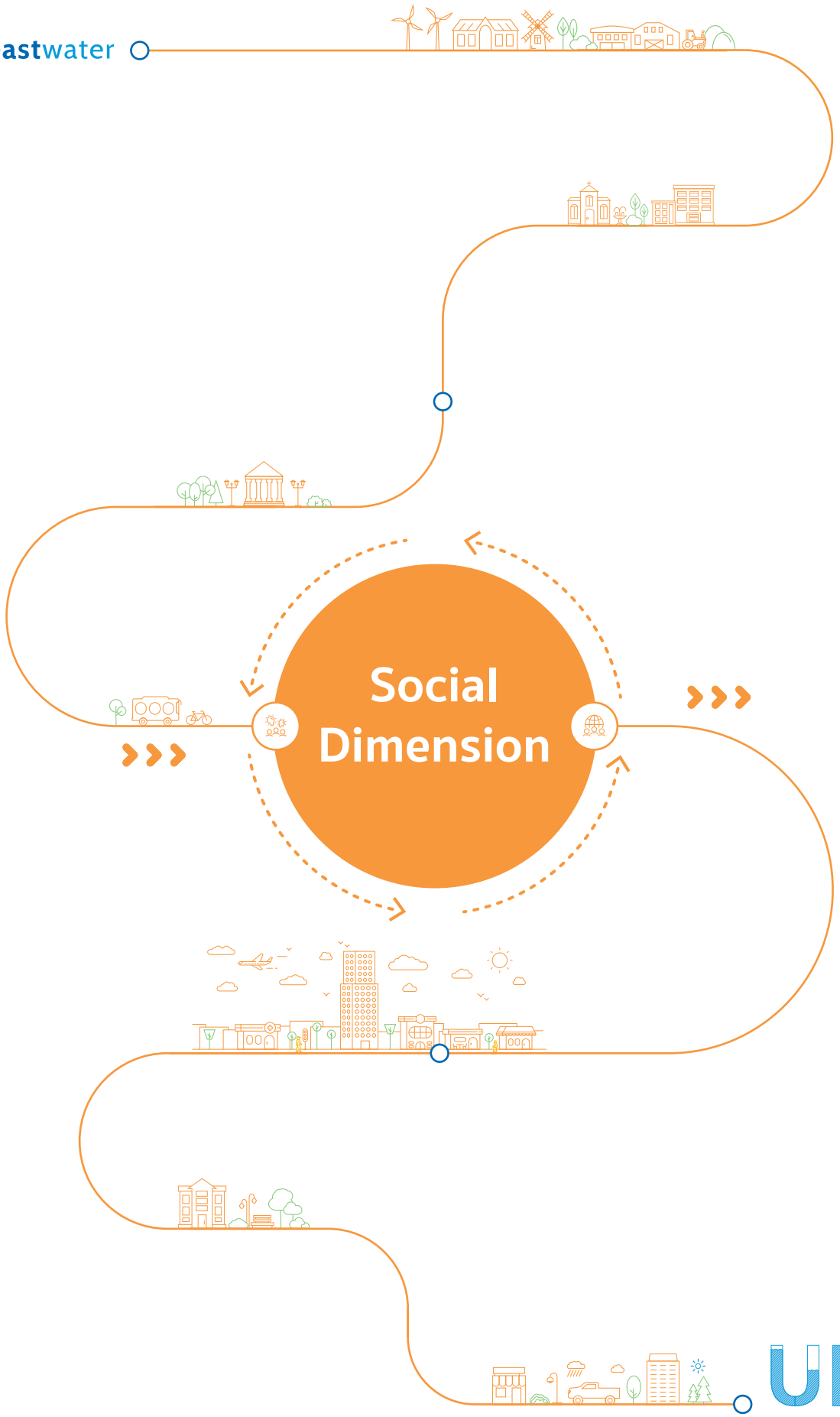
In 2019, the Company therefore established an action plan with the following 2 measures:

1. To check and fix pipeline leaks, one point at a time.
2. To plan and conduct field surveys on pipelines and identify weak points through joint discussions with experts to fix the pipelines with a high risk level (The underpass of Motorway Route No. 7, Laem Chabang, and the pipeline from Bang Pakong-Chonburi.) The operation is expected to complete in 2020.

Waste Management at Head Office

The Company has become a member of the **"Vibhavadi Zero Waste"** project hosted by the Office of the Securities and Exchange Commission (SEC). The project's grand opening was held on 4 December 2019. The project's objective was to invite all people to help manage waste within organizations in an efficient manner and reduce non-recyclable or non-useful waste to minimal levels. The project is based on the 3R principles "Reduce, Reuse, and Recycle." The members are encouraged to reduce use of future waste and learn to manage different types of waste, leading to a circular economy. Reports on waste management information can be submitted through the platform created by the SEC for progress measurement.

eastwater



URD

Adding Value to Quality Personnel

Strengthening Human Resources Management Strategies with Corporate Core Values

Currently, large organizations pay attention to Core Competencies of their employees as Core Competencies are determined based on characteristics, qualities and behaviors important to and necessary for the performance of duties in each organization. The organizations communicate and impart knowledge about Core Competencies to the employees so that they understand and exhibit behaviors that correspond with the Core Competencies. Their practices become Core Values of that particular organization. Moreover, Core Competencies serve as an overall guideline for human resources management to be in the same direction and consistent, ranging from recruitment and performance evaluation to personnel development.

In 2019, the Company Group communicated its Core Values "SHARP" to its employees through its internal public relations channels and conducted a number of activities to link the human resources process to corporate Core Values. Core Values were included as part of different human resources processes, for example, questions for interviewing new employees, performance evaluation, and use of performance evaluation results to determine individual development plans.

The Company Group's operations support the corporate Core Values as follows:

1 Stakeholder Focus:

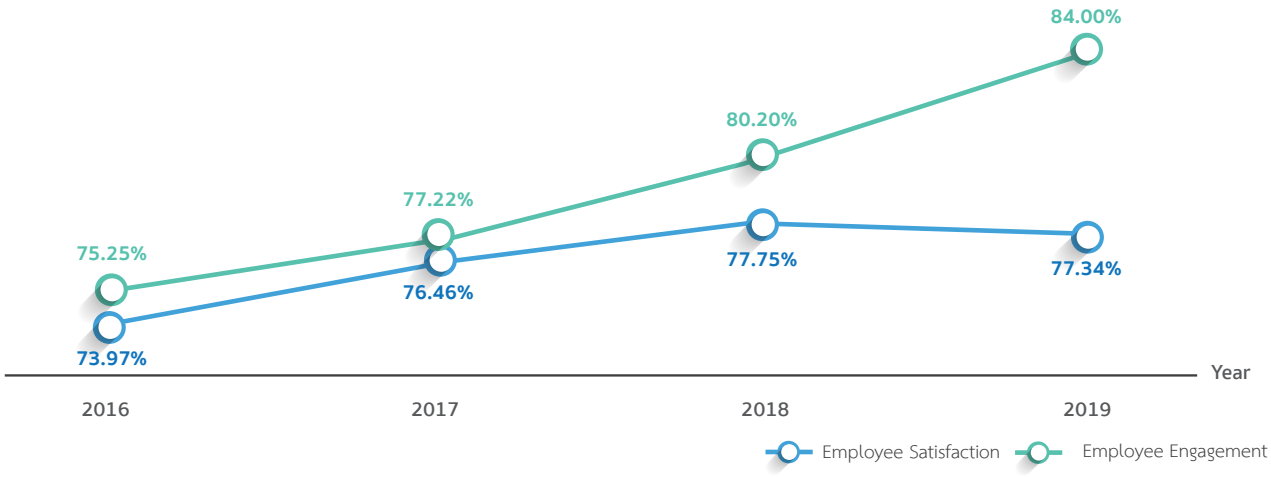
To determine human resources management guidelines as appropriate and beneficial to the organization and its employees, the Company took the following actions:

- **Employee Satisfaction and Engagement Survey**

The Company annually conducts employee satisfaction and engagement surveys with a view to gathering and using results for improvement of policies or plans relating to employees.

In 2019, the employee satisfaction level stood at 77.34%, a slight decrease over the previous result of 77.75%. The employee engagement level was 84.00%, higher than the previous year's result of 80.20%.

Employee Satisfaction and Employee Engagement Scores 2016-2019

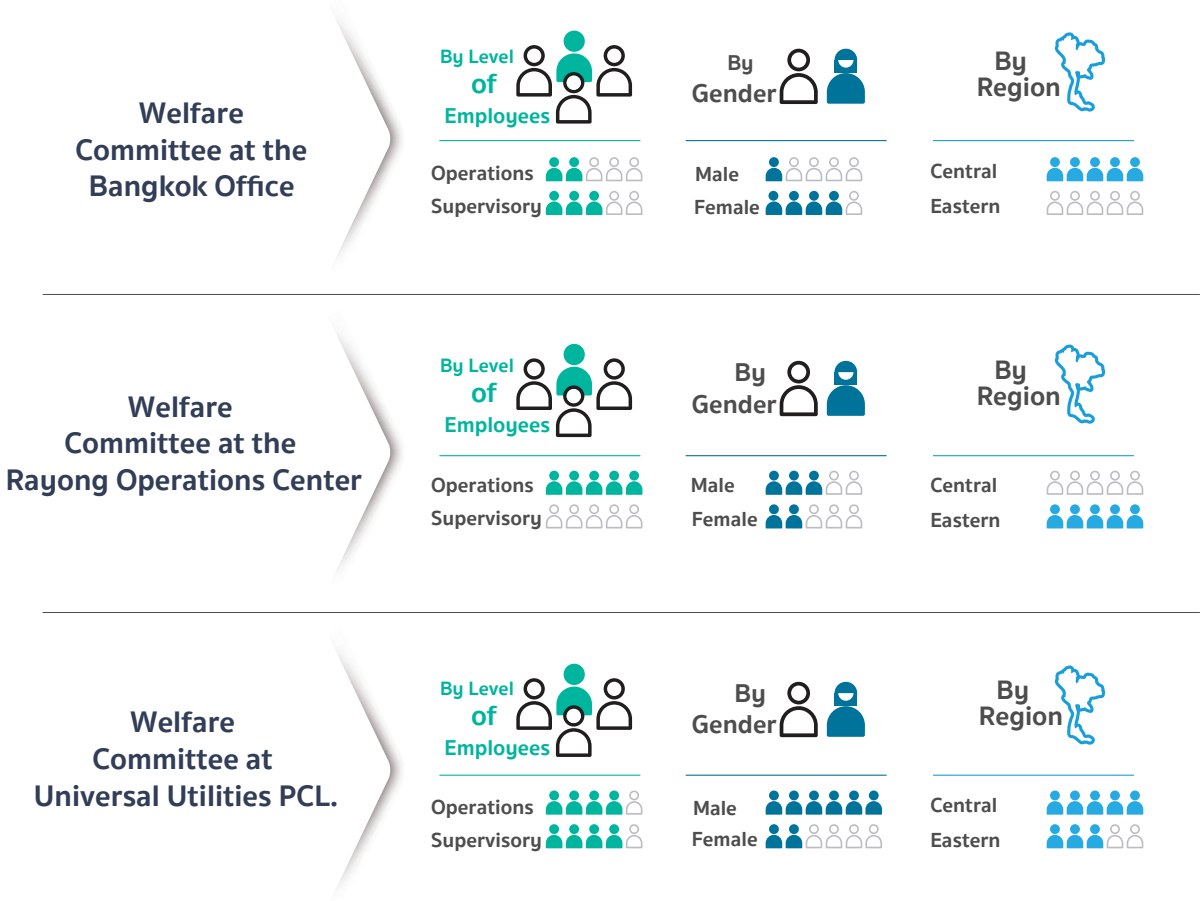


- **Employee Welfare Management**
  (Disclosure 102-41)

The Company Group organized an election of a welfare committee for its establishment according to the Labour Protection Act B.E. 2541 (1998). Under the law, any establishment with at least 50 workers must set up a welfare committee within its establishment. The welfare committee must comprise at least 5 representatives from the workers' side with the term of office of 2 years. The intention of the establishment of the welfare committee is to allow the committee to participate in the organization's management of welfare benefits that truly meet the workers' needs. Also, the organization and the workers will have a chance to have discussions, provide suggestions, and exchange ideas regarding employment conditions, work conditions, and workers' life quality enhancement. This is another means to promote work morale for workers and improve their work performance as well as the overall corporate performance.

Currently, the Company Group has 3 welfare committees as follows:

- The welfare committees of Eastern Water Resources Development and Management Public Company Limited. There are two welfare committees, one at the Head Office Bangkok and another at the Rayong Operations Center. There are a total of 10 committee members, representing 4.30% of the total employees.
- The welfare committee of Universal Utilities Public Company Limited comprising 8 members, representing 5.67% of the total employees.



In the past year, the welfare committee not only served as an intermediary to communicate information and build mutual understanding and good relationships between the employer and the employees, but also provided opinions regarding arrangements of welfare schemes and took actions to improve the wellbeing of the employees as follows:

1. Considered the list of employees with appropriate qualifications for house and car loan interest support.
2. Proposed a flexible welfare scheme as appropriate. The Company adjusted the criteria for disbursements of welfare benefits to ensure flexibility based on the welfare committee's opinions. The scheme was announced in March 2019.
3. Introduced activities to promote employees' health such as a physical exercise activity for the employees working at the Rayong Operation Center.

2 Gathering opinions received through different channels for improvement of human resources management works to meet expectations and better align with the current working environment

- **Amendments to work rules and Benefits**

1. To amend work rules to ensure compliance with the Labour Protection Act (Issue 7) B.E. 2562 (2019) as follows:
   1.1 To expand maternity leave days from 90 to 98.
   1.2 To pay compensation to workers whose length of service is 20 years at the rate of 400 days.
2. To amend criteria regarding several types of Benefits such as daily allowance, accommodation expense, travelling expense, etc.

- **Amendments to practices regarding authority to take actions within the organization**

To decentralize power and streamline work processes to be more agile and efficient, the Company group revised its practices regarding authority to take actions within the organization by allowing supervisory employees to have more authority to make decisions such as to consider and grant approval for travelling and leave requests of their employees within respective functions

3 Adjusting the human resources management process to align with corporate Core Values of "SHARP" as follows:

- **HR Master Plan 2020-2022**

The HR Master Plan 2020-2022 focuses on preparedness to accommodate total water solution business growth. The plan includes the recruitment of employees with direct knowledge and experience in related fields, the development of existing employees to have skill sets that are appropriate to current duties and responsibilities, and the enhancement of knowledge for future business expansion through development of a specialist system, systematic knowledge management, and use of winners' achievements from innovation competitions for further concrete developments.

- **Succession Plan**

In 2019, the Company hired a consultant on succession plan management to identify criteria for selecting mission critical positions. Without preparedness of successors to such positions, the business group would be affected. The business group then identified key executive positions that require successors and created successors' profiles covering, for example, work objectives, main duties, desirable competencies, and experiences of incumbents. These profiles would be used as a framework for selecting successors.

To select a successor, the successor's profile shall be considered and compared against the particular candidate's personal profile such as his/her general information, knowledge, work experience, and performance ratings. This is to assess the readiness of a potential successor.

Furthermore, to ensure comprehensive assessment of a successor, more assessment tools shall be utilized, such as attitude assessment and 360 degree assessment. An individual development plan for each successor shall be developed according to assessment results to ensure that the successor will be able to fulfill the duties of the predecessor's position in the future.

- **Performance Management System**

Performance management is a process that creates an environment and a work approach contributing to excellent job performance. The goal is to improve work performance and ensure that the outcomes of performance are clearly specified and aligned with organizational goals toward which activities are aimed.

A good performance management is a result of a two-way communication with the belief in equality, where supervisors and employees are allowed to communicate their expectations and clear responsibilities and jointly determine keyperformance indicators.

A performance management system manual of the Company Group was created to be a guidance for employees and supervisors to understand the overall performance management system, roles and duties of involved parties in the performance management, the performance management process, and other matters such as remuneration management guidelines. The manual shall create a clear understanding among all employees.

Modern performance management shall comprise at least 3 components as follows:

1. Result-oriented performance management
2. Focus on organizational goals/objectives
3. Mutual goal setting between supervisor and employee. Allowing employees to participate in goal setting is an important factor in successful work.

Performance management of the Company can be divided into 2 parts as follows:

1. Key Performance Indicator (KPIs) shall be used for assessing the outcomes of operations, comparing actual results against specific targets, and measuring progress of the plan and achievements.
2. Competencies shall be used for measuring employees' work practices, behaviors, capabilities, skills and knowledge required for the performance of duties against expectations in their current positions.

4 Service User Satisfaction Survey

The Company adopted the Shared Service Center (SSC) policy to improve service performance and agility. Under the policy, all enabling functions such as Accounting, Finance, Procurement and HR of the business group serve together as one team in providing services organization-wide. The policy has been implemented since 2017, and the service user satisfaction survey is conducted to assess the service performance of the SSC in terms of coordination among different functions. This helps reinforce a corporate core value regarding stakeholder focus. The average satisfaction score in 2019 of the 6 service providing units was 83.90%, higher than the previous year's result of 81.90%

Developing into a National Water Organization

(Disclosure 404-2)

As the Company plays a major role managing Thailand's water resources to promote economic and social prosperity in the eastern region through providing total water solution services to the industrial and household sectors; personnel expertise becomes a key factor in driving the organization forward. One of the Company's challenges is to develop required capabilities and skills to render quick and diversified services according to water users' needs in order to live up to the vision of "To be the leader in total water solution of the country."

Regarding the overall management guidance, the Company continues to focus on the equal and ongoing career growth and development opportunities for employees in all groups and at all levels through individual development plans (IDPs.) The employee and the supervisor shall annually develop an IDP by jointly determining goals and development guidelines using the competency based development model. The available personnel capability development courses are as follows:

1 Core Course
:: These courses are compulsory and must be taken by all employees to ensure that they develop behaviors that are conducive to the fulfillment of organizational goals and vision and that all functions comply with the provision of laws, rules, and regulations concerned.

2 Managerial Course
:: These courses focus on promoting leadership among executives at all levels as they are a key driver of business strategies, enabling the organization to achieve goals. These courses are also aimed at grooming talented employees to take on higher supervisory roles in the future.

3 Functional Course
:: These courses focus on developing knowledge, skills, and attitudes necessary for the fulfillment of duties in respective positions to reach specific goals.

4 Elective Course
:: These courses are complementary to other courses to promote employees' self-development at present and in the future.

Goals of personnel knowledge and capability development towards 2022 in the organizational development roadmap are as follows:

1. 60.00% of the successors are developed and trained to have skills, knowledge and new abilities.
2. 80.00% of the employees in core business functions are developed and trained to have skills relating to total water solutions.

Key Developments in 2019

In 2019, a number of development courses according to career paths were offered, in forms of trainings, seminars, real-practice exercises, and site visits in Thailand and other countries. Online self-learning was also promoted. Focus in placed on grooming employees to become experts in all aspects, to have knowledge in water, to be able to accommodate new missions in line with business expansion, and to advance and grow in career paths that are aligned with business directions. During the year, focus was placed on fixing and building a foundation for organizational development to keep up with changes in today's digital world and support internal restructurings. The Company is designing development paths based on core competencies, managerial skills, and job descriptions. Regarding IDPs 2019, the HR Department discussed with respective supervisors to analyze key skills necessary for job performance and career advancement. IDPs were adjusted to reflect employees' life cycle, from new hires to operational employees, executives, and those approaching retirement. Highlights of developments can be summarized as follows:

1) New employee **onboarding program**
2) Fostering of basiac knowledge about sustainable development with **universal standards**
3) Development of **leadership and professional skills**
4) Promotion of a **self-learning culture**
5) Retention of quality employees with **talent & succession management**
6) **Knowledge exchange** with outside agencies
7) Systematic **internal knowledge management**
8) Fair **evaluation** of competency and work performance

1) New employee onboarding program

East Water's onboarding program starts when a new employees first joins the organization through a learning program developed by his/her supervisor. The learning program contains knowledge and skills required for his/her job position (job competency) and suggestions regarding work manuals and procedures as well as IT systems so that the new employee can begin his/her work smoothly.

In addition, a new employee orientation program was launched so that all new employees will have a chance to meet with high-level executives and learn important policies, corporate Core Values and cultures, and practices and standards from the executives directly. The new employees will also learn the basic business knowledge of the Company Group through theories and site visits. This year, a new training activity was added to learn about corporate cultures through the "Agile" concept under the theme of "Agile X Team." Through such activity, the new employees learned to adjust themselves to the "S: H: A: R: P" work style with "Stakholder Focus," "Holistic Thinking," "Adaptability," "Result Acceleration," and "Proactive and Creative Thinking." Most importantly, they learned to have fun in doing work for the team's success.

Post-training knowledge test score:: All passed the test with an average score of 85.73%.
Training satisfaction score:: 94.59%

2) Fostering of basic knowledge about sustainable development with universal standards

To ensure that the organizational management is compliant with universal standards, transparent, fair, and auditable; the Company has fostered the basic knowledge about sustainable development, good corporate governance, and quality management system relating to occupational health, safety and environment among all employees. The Company joined hands with relevant agencies to develop training plans as follows:

2.1) Quality System and Environmental Management Courses: These courses were considered important courses of 2019 as the Company developed its strategic business development plans based on quality systems. The Company also developed systems and revamped all work processes across all functions to ensure consistency and connectivity according to the new organizational structure and the certified ISO standards for the quality management system (ISO 9001:2015) and the environmental management system (ISO 14001:2015) The Company is preparing to file a request for certified ISO standards for its occupational health and safety management system (ISO 45001:2018) Hence, the Company, in collaboration with the Corporate Strategy Department, launched training plans to review all relevant requirements and prepare personnel

to be ready for becoming internal inspectors for quality assurance, environmental management, and occupational health and safety management. Key courses included:

- ISO 9001:2015, ISO 14001:2015, and ISO 45001:2018 (Integration System)
- Requirements for occupational health and safety management system (Requirements for ISO 45001:2018)
- Internal inspectors for quality assurance, environmental management, and occupational health and safety management (ISO 9001:2015, ISO 14001:2015, and ISO 45001:2018)
- Awareness about environment and safety

Post-training knowledge test score:: All passed the test. **Impact on the organization::** Risk assessment was taken according to the quality system at all levels of the new organizational structure.

2.2) Sustainability Courses: These courses focused on building understanding of business management for sustainable development according to guidelines of the Stock Exchange of Thailand (SET), the Office of Securities and Exchange Commission (SEC), and Thai listed companies. The courses were offered at both basic and operational levels, covering theories, principles, and practical applications. Key course included:

- Business Management for Sustainable Development of the SET
- Business and Human Rights
- GRI Standards Certified Training Course

Post-training knowledge test score:: All passed the test. **Impact on the organization::** The Company earned a number of prestigious awards related to business undertakings based on sustainable development, such as **"Sustainability Disclosure Recognition,"** and "Rising Star Sustainability Awards." The Company was also chosen to be 1 of the 98 listed companies in the list of "Thailand Sustainability Investment" or **"Sustainable Stocks."**

2.3) Good Corporate Governance Courses: The courses were offered with the support from the Corporate Secretary Office of the Company. The objectives of the courses were to foster the spirit of the employees to jointly fight against corruption and to comply with the CG Code and the Code of Conduct of the Company Group as well as applicable laws and regulations. The courses also included newly enacted laws in 2019. The key courses included the Public and Private Partnership Act, the Private Data Protection Act, the Factories Act, and other laws governing the industrial works. The Company also launched a movie watching event with a movie regarding tricky games with corruption.

The event also featured a panel discussion under the topic of **"EWG Love CG: Employees with SHARP Hearts – The Smart Fight against Corruption."** Also, the employees conducted the knowledge test regarding CG & Anti-Corruption at the end of the year.

Post-training knowledge test score:: 95.86% of the employees conducted the test and all pasted the test. **Impact on the organization::** At the end of 2019, there was one complaint being filed. The issue was being subjected to the fact-finding process according to the complaint handling process as specified in the Company Group's Code of Conduct.

2.4) Occupational Health and Safety, and Energy Conservation Courses: These courses included compulsory courses required by relevant laws and other courses to support operations and the ability to work with the sense of responsibility for occupational safety, health, and environment. The courses focused on the prevention of accidents at work at all degrees of severity according to the Occupational Safety, Health and Environment policy of the Company. Key courses included:

- Creating Safety Behaviors
- Work Safety Regarding Electricity and Assistance for Those Facing Electricity Hazards
- Safety Trainers for General and New Employees under the Occupational Safety, Health and Environment Act.
- Simple Energy Conservation Techniques and Building Awareness Organization-Wide
- Rooftop Solar System
- Site visit on the topic of safety at SCG Chemicals Company Limited

Post-training knowledge test score:: All passed the test. **Impact on the organization::** The number of the employees experiencing work accidents decreased over the last year. There was one case of an employee falling from a height at the Company's operating site. In this regard, the Company reiterated and fostered the concept of "Safety Moment," reminding the employees to use stairs properly and safely to prevent a repeated accident. (Please refer to further details in the section of "Occupational Safety, Health and Environment", Page 72, in this report.)

3 Development of leadership and professional skills

Leadership capability development is a key factor in driving the organization towards its goals. Hence, the Company Group pays attention to the development of leadership skills for management from entry to senior levels. Focus is placed on coaching techniques, open business perspectives, and executive business networking. In 2019, one-on-one leadership development program for high performance leaders was developed with the course title "Storytelling for Innovative Leader." The courses were aimed at creating concrete changes and measurable results.

Another key factor in driving business growth is a "Team" of efficient professionals in the fields related to total water solution technology. The development plans were designed to respond to organizational strategic plans and to be ready for the era of technology-driven changes by using the digital disruption model on the basis of competency-based development. This year's courses focused on automation skills development, proactive machinery repairs and maintenance, performance-boosting technology, and domestic and overseas site visits on total water solution technology.

4 Promotion of a self-learning and self-development culture

Change management is another challenge in today's digital world. Rapid technological changes make traditional ways of learning outdated and unable to respond to the lifestyles of employees of all age groups and genders. Thus, the Company Group started adjusting its learning strategies to foster a self-learning culture by adopting online tools as an additional means for learning anywhere, anytime. The online learning system was developed and first implemented in the orientation session for new employees. The system user satisfaction score was 83.33%.

Furthermore, the Company group adjusted its benefits for employees to allow the employees to disburse expenses for the development of other interesting skills such as languages, as another way to promote self-development. The Company also started a program for employees approaching retirement so that they could learn about laws on senior citizens, healthcare, and vocational raining for them to lead a happy livelihood after retirement. This showed the Company's intention to give importance to each and every employee without leaving anyone behind throughout their length of service.

5 Retention of quality employees with Talent & Succession Management

The Company Group specified Talent & Succession Management strategies through developing Career Paths and Succession Plans. In 2019, relevant actions were undertaken according to the Succession Plans to prevent risks of losses of personnel in critical positions with possible impacts on business operations. There are 3 steps of succession management:

1) Identify critical positions.
2) Identifying successors by selecting persons with proper qualities for respective positions, taking into account required performance ratings, attitude scores and 360-degree evaluation scores.
3) Establishing IDPs for successors and individual performance evaluations linked to job positions. The purpose of the succession management is to enable the successors to step up into the target positions with confidence. The Company joined hands with the project consultant, a national professional organization, in completing Steps 1 and 2 as targeted. Appropriate IDPs will be further developed accordingly.

6 Knowledge exchange with outside agencies

In 2019, the Company Group arranged 3 knowledge exchange programs with external parties as follows:

Program 1 This program was a collaborative effort on personnel development between the Company Group and the 9th Royal Irrigation Office of the Royal Irrigation Department. The program provided training in Geographic Information System (GIS) using the Google Earth application for officials of the Royal Irrigation Department with a view to enhancing water management efficiency in the eastern region with information system development. There were two 3-day trainings.

Program 2 The "Coaching Techniques" training session 1 was offered to develop in-house coaching skills for supervisory employees up. Through memorandum of understanding between the Company Group and the Vocational Education Institute Eastern Region, the course offered hands-on experiences to educate students, teachers, and academic personnel at the Vocational Education Institute Eastern Region in order to prepare workforce for the Thai industrial sector in the future. The cooperation framework is 5 years.

Program 3 At the age of disruptive changes, consumer behaviors are changing rapidly. The concept of "Agile" work style has emerged and has been applied by many organizations. Siam Commercial Bank Public Company Limited (SCB) successfully adopted the concept of "Agile: Fail Fast, Learn Fast to Get Ahead" under the SCB Transformation strategy. The Company's new employee orientation session was prestigiously joined by the Agile Team of SCB to provide lectures on theories and practical exercises through new forms of group activities which were enjoyable and educational. The participants had hands-on experience on data analysis, design, and implementation. User feedback was collected for further analysis and improvement of relevant processes to truly cater to customer needs.

7 Systematic internal knowledge management

One of the sustainable development goals according to the organizational strategies is to provide systematic internal knowledge management in order to keep knowledge resources and records of past experiences for the organization. Such knowledge base will lead to increasing work performance and productivity, resulting in the development of new innovations and better organizational competitiveness in the future. KM Master Plan is divided into 3 phases. The first phase (2019-2020) concentrates on the development of a knowledge sharing and management system through knowledge mapping to clearly identify the scope of knowledge contents that are important and necessary for the total water solution business operations as well as the subject experts. In 2019, the knowledge mapping process of the Company Group was completed. Now, it is in the process of laying down a plan to develop an in-house expert system and an incentive system to motivate high performance employees to support internal knowledge management in the next phases.

In terms of knowledge exchange activities, in 2019, the EWG Knowledge Contest 2019 was conducted for the second consecutive year. The contest was expanded to cover all business group companies. The contestants submitted a total of 51 projects under various categories, including 18 "reprocess" projects and 11 "innovation" projects. The 17 finalist projects included 8 "reprocess" projects and 9 "innovation" projects. Those projects received additional recommendations regarding guidelines for systematically analyzing root causes of problems, the basics of "Kaizen," and coaching techniques from experts for further improvement of their projects.

Such contest was aimed at promoting exchanges of knowledge and learning as well as collecting knowledge contents systematically. The contest also promoted the application of the knowledge gained from the contest for further improvements of work processes and problem-solving in real life with tangible results. The participants also practiced pitching skills and developed a sense of pride from their successful presentation. All winners of the contest in all categories received not only money awards but also a chance to experience international water management practices at Water Plaza Kitakyushu, a demonstration plant for water recycling, in Japan. The knowledge gained from the trip would be presented to The Company high-level executives.

Impact on the organization: The EWG Knowledge Contest 2019 was rolled out and will be carried on to 2020 as follows:

1. Twenty-eight projects (54.90% of the total projects) would be further applied to the improvement of internal work processes. For example, the relevant information would be adapted to the functioning of the pumping machines, the smart light control box, the Dashboard SCADA SMART System, the raw water quality monitoring devices, etc.
2. Procedure Manuals/work instructions (4 issues)
3. Clips on knowledge about central knowledge base (20 issues)
4. Knowledge sharing with other relevant parties (2 issues)

8 Fair evaluation of competency and work performance

The Company Group's guidance for competency development evaluation can be divided into 3 levels: Level 1: Evaluation of satisfaction and comprehension; Level 2: Evaluation of a shift in the employees' competencies after training; and Level 3: Evaluation of actual results against KPIs mutually agreed upon by the supervisors and the employees. In 2019, the average participant satisfaction score of the Company and its affiliated companies was 85.63% and 87.89%, respectively. All the participants passed the comprehension test based on professional standards and received certificates. The evaluation for the second and third levels is being conducted.

The competency gaps identified from the evaluation of the employees' competencies in 2019 would be used as a basis for preparing IDPs in 2020. Also, the results from the evaluation of the performance against KPIs would be used for considering annual wages and remuneration for the employees. It is required that all employees be subjected to performance evaluation at least once per year. The performance evaluation will provide an opportunity for the employee to review his/her competency and performance and get recommendations from his/her supervisor for further improvement in the following year.

The Company Group also established a performance management system (PMS) to link performance to Career Path and to develop Talents and Successors, as a means to drive ongoing developments of both its employees and organization. The PMS was initially implemented to support the evaluation process in 2019 and its full-scale implementation would take place in 2021.

Results of Personnel Capability Development

(Disclosure 404-1)

East Water

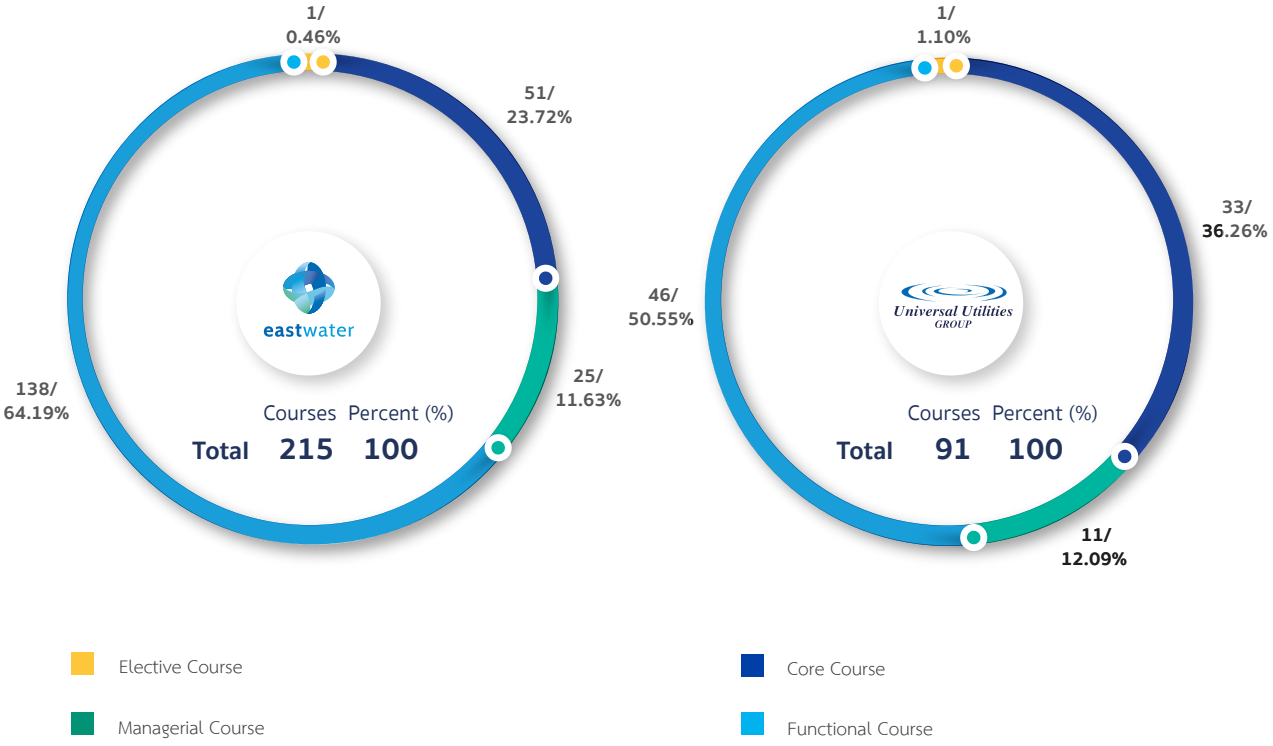
Average training hours were 56.96 hours per person per year.

- Male employees: An average of 59.44 hours per person per year;
  Female employees: An average of 54.37 hours per person per year.
- Executive level: An average of 83.23 hours per person per year; Supervisory level: An average of 91.35 hours per person per year; Operating officer level: An average of 47.52 hours per person per year.

Affiliated Companies [Universal Utilities]

Average training hours were 59.88 hours per person per year.

- Male employees: An average of 69.82 hours per person per year;
  Female employees: An average of 39.07 hours per person per year.
- Executive level: An average of 53.00 hours per person per year; Supervisory level: An average of 62.26 hours per person per year; Operating officer level: An average of 60.06 hours per person per year.



The budget for personnel development and knowledge management totaled Baht 8.67 million (The budget for the Company and its affiliated companies was Baht 5.52 million and Baht 3.15 million, respectively.) An average expense per person was Baht 0.02 million.

Personnel Development Achievements in 2019

- The average participant satisfaction score of the Company and its affiliated companies was 85.63% and 87.89%, respectively.
- On average, the employees gained additional knowledge from trainings at 100%.
- On average, the organizational performance was higher than last year by 0.74%.
- The average managerial competency evaluation score was 70.83% (2019 was the first year of the evaluation because the Company revised its managerial competencies.)
- The average core competency evaluation score was 73.39% (2019 was the first year of the evaluation because the Company revised its managerial competencies.)

Employees' Quality of Life

(Disclosure 401-2)

In doing today's business, "Employees" is the most important factor in driving a company's strength and sustainability. Employees are a key driver of business activities and business advancement depends upon the employees' ability to initiate and create new things.

Therefore, the Company always pays attention to its employees and continues to build good relationships, provide incentives, and improve engagement with them. The Company has conducted several projects to support its employees' work performance or to reduce their financial burden in order to boost their best performance.

Flexible Benefits

In 2019, the Company Group made adjustments to its current flexible benefits to be more diversified and appropriate according to specific needs of the different groups of employees based on recommendations from the welfare committee. The adjustments were due to a number of differences between the business group employees in terms of, for example, age and status.

Annual Physical Check-Up Program

The Company Group arranged annual physical check-ups for its employees for initial health screenings. Risks of developing diseases were assessed. If the employee was diagnosed with a disease, he/she would be subjected to a proper treatment in a timely manner. Also, recommendations were provided to those with the risks of contracting diseases to change their behaviors. Arrangements of medical check-ups would be conducted according to risk factors to screen any work-related diseases for employees whose job duties were associated with different risk factors such as chemicals, light, and sound. The occupational health doctor would be the person to assess possible risk factors relating to work and determine physical check-up items connected to such risk factors.

Employee Uniform

The Company provided employee uniforms to facilitate fieldwork operations. Each fieldwork employee was entitled to receive 2 uniforms and 1 pair of safety shoes annually. All this was part of the Company's effort to promote operational safety.

Life and Health Insurance

For life security and as a guarantee for the employees' family members as well as to relieve a financial burden in terms of medical expenses of the employees and their spouse and children, the Company took out life insurance for the employees at all levels as well as health insurance for the employees and their spouse and children.

Provident Fund

The employees who completed the probationary period may apply for membership of the provident fund as a means to save money and provide a security for their future. Apart from contributions from the employees' part, the Company also makes contributions to the provident fund according to the employees' length of service. The employees' savings and contributions from the Company would be managed by selected securities companies to provide returns on investments in the provident fund. The employees may choose their preferred investment policies depending upon individual risk appetites.

In 2019, the business group started implementing the provident fund investment policy that created a balanced portfolio over the Life Path of each employee. Investment mixes were tailored to reflect different risk appetites according to age ranges. This was to ensure that the employees would have enough money to lead their life after retirement.

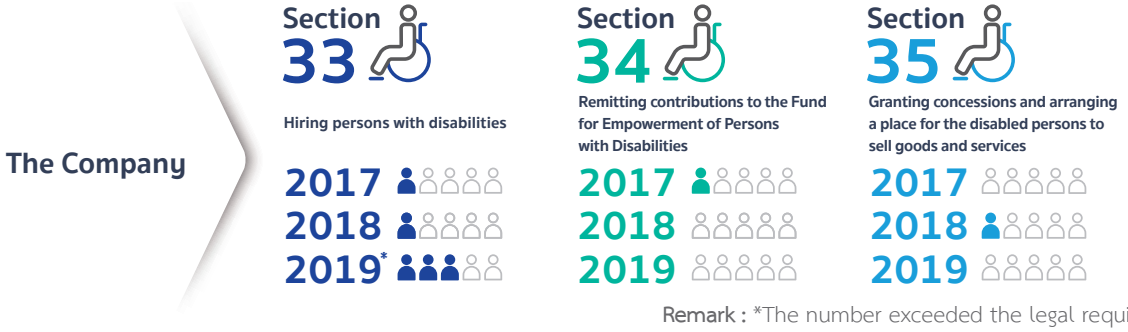
Maternity Leave and Resumption of Duties After Return from Maternity Leave

In 2018-2019, there were 12 employees of the business group who took maternity leave. 58% of them exercised the full leave, i.e. 90 days. All of them returned to work after the end of the maternity leave. All those who took maternity leave in 2018-2019 are still working today.

In addition, in 2019, the Labour Protection Act (Issue7) B.E. 2562 (2019) was announced. The number of maternity leave days was changed to 98 (including public holidays.) The Company already revised its work rules to reflect such new law.

Respect for Human Rights

The Company has been committed to the equal treatment of all employees as part of its human right policy. The Company's intention was announced in the section of "Human Rights and Employment" in its Sustainability policy in 2019 in order to drive a sustainable economy. The Company has promoted the equal and fair treatment of its employees as well as the hiring of persons with disabilities without any discrimination. In 2019, the business group recruited 4 persons with disabilities. Apart from the employment opportunity, these employees also received fair treatment. For example, they were given a chance to work according to their knowledge and capabilities and were entitled to wages/ salaries and benefits. They were also trained to improve their knowledge and capabilities to enhance work performance according to job positions.



Remark : *The number exceeded the legal requirement.

Additionally, in 2019 the Company educated its employees on human rights by sending two relevant employees to participate in the Business and Human Rights training course for further work improvements.

Personal Data Protection

The Personal Data Protection Act B.E. 2562 (2019) was announced on 27 May 2019 with the objective to protect private protect personal data from being collected, used or disclosed for wrong purposes. The act specifies a proper mechanism to manage personal data and requires that personal information owners be protected and able to check and control their own personal information as appropriate.

To comply with the said act, the Company announced the Privacy policy, stating the objectives of data collection, the criteria for personal data collection, the maintenance of security and safety of personal data, and the rights of the data owners. The personal data stored by the Company included personal data of the employees and the trading partners.

Happy Retirement Company Program

In 2019, the business group joined in the "Happy Retirement Company Program", a collaborative project between the SEC, the SET, the Association of Provident Fund (Thailand), the Association of Investment Management Companies, and the asset management companies that provided provident funds management services. As such, the employees were allowed to become members of the provident fund and have savings to happily lead their life after retirement.

The group companies joined in the Happy Retirement Company program and passed all specific criteria such as the availability of proper investment policies for employees at different ages, the education on the provident fund and investment policies, the employees' contributions to the provident fund at the highest rate allowed by law. On 16 October 2019, the business group received a gold medal from the SEC. This reflected its commitment to taking care of and providing security for its employees. As a result, 92.92% of the business group employees joined the provident fund and 61.19% of them chose to pay contributions at 10.00% up.

Mutual Separation Plan

In 2019, the business group launched the Mutual Separation Plan on an exceptional basis. This allowed the employees to have options to choose their own life plan without having to wait to retire. Their expected returns should be higher than legal requirements. The participants were educated about laws on senior citizens, healthcare, and vocational skills so that they could conduct their life happily after retiring.

Communications and Relations Activities

Relations Activities

The business group communicates the outlook of its business operations, policy framework, and business goals of each year to its employees to create mutual understanding, work coordination, and collaboration. This has positive impact on the business group's performance efficiency and effectiveness.

- CEO Town Hall meetings are regularly held for the executives to communicate the business outlook, targets, policies, action plans, and strategies of each year to the employees for their consistent understanding. In 2019, the first meeting was held on 28 March 2019 with a total of 181 participants. The second meeting was held on 20 December 2019 with a total of 306 participants. The executives had shared with the employees the policies on the expansion of the investment in the total water solution business to secure ongoing and sustainable growth.
- The CG Day was the event to promote sustainable development and good corporate governance. The CG knowledge was shared with the employees. The event was conducted under the theme of **"EWG Love CG: Employees with SHARP Hearts – The Smart Fight against Corruption"** on 16 October 2019 at the Esplanade theater, Rajadapisek Road. At the event, a movie named "Bad Genius" was launched. The event was joined by Mr. Ketusephsyswasdi Palakavangsa Na Ayudhaya (NA NAKE) as a guest speaker to give a summary of the moral of the story. On the same day, there was a bowling competition among employees, an annual sports event of the business group to promote good relationships between the employees from different functions. The competition was joined by a total of 290 employees.

CSR Activities

The business group held a number of CSR activities to allow the employees to participate in according to their preferences This helped encourage the participation in social and environmental responsibility efforts.

- In 2019, there were 4 blood donation drives with the total donated blood of 100,350 cc. This could support the lives of around 287 patients. (One patient would need approximately 350 cc. of blood.) This activity has been held since 2007, in collaboration with the Phramongkutklao Medical Center.
- The employees were encouraged to join in the CSR activities led by the Company. These included the tree planting activities topromote community forestation at Ban Sam Phran, Tha Takieb District, Chachoengsao and at Ban Nong Mueang, Wang Chan District, Rayong, as well as the Buddhist Robe Offering Ceremony for 2019.
- The employees were invited to donate unused belongings such as clothes, cosmetics, and books to foundations.
- The business group supported support employee club activities in terms of sports, wellness, and recreation to build good relationships among the employees. In 2019, the Running club, the Bicycle club, and the Volunteers club held a variety of activities. These included a running race (with accumulated running distance) and a financial donation to a school for the blind. The CSR activities also included a trash collection at Koh Lan, a luncheon for the disabled, and a donation of animal feed.
- The artificial coral reef planting activity was conducted to raise awareness about the preservation of a balance under the sea due to the important role of the coral reefs in the ecosystem. The coral reefs served as the sanctuaries and habitats of the marine animals and helped block the waves and wind and the damage to the coastlines. The activity was joined by a total of 90 employees.

All the CSR activities were held to promote the employees' participation in the environmental, sports and community support efforts. The activities were joined by 149 employees, accounting for 40.27% of the total business group employees.

Employee Complaints

The Company Group has in place the Whistleblower system in line with the international standards. The system serves a tool for the directors, executives, employees and all groups of stakeholders to file complaints, leads or recommendations. The complainant may take actions via the following channels:

- The Company's website
- E-mail to the Audit Committee, or the President & CEO, or the Corporate Secretary
- The opinion boxes at the Bangkok Office and the Rayong Office
- Letter to the Audit Committee

At the end of 2019, there was one complaint being filed. The issue was being subjected to the fact-finding process according to the complaint handling process as specified in the Company Group's Code of Conduct.

Sharing Knowledge with Society

1 An MOU with the Eastern Institute of Vocational Technology to support development of officials and students for EEC

The Company entered into an MOU with the Eastern Institute of Vocational Technology of the Office of the Vocational Education Commission to jointly develop academic affairs and capabilities of educational workforce, to exchange knowledge between the institute and the Company and its affiliated companies, and to support and prepare the students for the Eastern Economic Corridor (EEC.) The business group accepted the applications of the students at high vocational certificate level of the technician program of the institute to practice internship with the business group. The program is available for two students a year. The participants gained experiences from trainings, site visits, and technological transfers from the business group. Dual program were jointly developed for certain fields of studies.

In 2019, The Company partnered with the Eastern Institute of Vocational Educational Institute Eastern Region Technology to arrange the "Coaching Techniques" training session 1 to develop coaching skills within the organization. The guest speaker was invited from the Department of Skill Development. The training was joined by 40 participants. Of this, 30 were the business group employees, and 10 were from the institute. The training was held twice, on 19-20 September 2019 and 25-26 September 2019, for a total of 4 days. This was a pilot project showcasing the collaborative effort on education and skill development.

2 Student Internship Program

The Company arranges a student internship program to provide work experiences in the real-world context to university students to develop their competencies. The number of students joining the program can be summarized as follows:

The number of interns from 2017-2019

The Company also arranges for mentors to provide coaching throughout the internship period, accident and life insurance coverage, daily allowance for internship as stipulated by laws (in accordance with the Notification of the Ministry of Labour prescribing the rules regarding protection for interns, Section 2, Items 10 and 11 which stipulates that the Company is required to pay allowance at the rate not less than 50% of the prevailing highest minimum wage rate to the interns at least once a month.)

3 Public Service Executive Development Program (PSED) by the Institute for Good Governance Promotion (IGP), Officer of the Public Sector Development Commission (OPDC)

The Company has been chosen by the IGP of the OPDC to join in the PSED since 2011, and 2019 was the 9th year of its participation. There were a total of 9 government officials joining the internship with the Company. The high-level executives were assigned to be mentors for those participants. This effort was to create and develop new generations of government officials to lead changes in government agencies and contribute to the country's development.

The Company's employees and the government officials in the program jointly prepared learning plans, containing guidelines, methods, timeframes, details of activities and evaluation, covering specific branches of knowledge, capabilities, skills, and experiences under the following topics:

- Leadership and Executives at Private Agencies
- Organizational Management
- Preparation and Implementation of Strategies, Projects, and Plans

The President & CEO was invited to impart his direct experience to the participants; and other executives were assigned to share knowledge about the Company's business. The government officials in the program were also allowed to share their perspectives beneficial to the organization as guidelines for efficiency enhancement.

Occupational Safety, Health and Environment

(Disclosure 403-1, 403-5, 403-9)

The Company attaches importance to occupational safety, health and environment management with the **"Zero Workplace Accident"** target. In addition to carrying out operations in accordance with the laws, the Company adopts relevant standards to create a safe workplace environment and enhance the quality of life of its employees, trading partners, and contractors.

In 2019, one moderate injury (with recordable work-related injuries) occurred to one male employee. He fell from the stairs at the Nong Plalai Pump Station 1. The nature of the accident was a fall from a height. After the accident, the Company took the employee to the hospital for medical treatment immediately.

In response to the aforesaid accident, the Company set up an investigation committee to analyze root causes and identify preventive measures to avoid recurrences. The measures taken by the Company included an activity to raise awareness about working at a height using stairs and work safety among employees.

Work-related illness rate, injury rate and fatality rate are as shown in the table below.

Summary of Total Accidents-Employees (Injury Frequency Rate: IFR) (Table 1)

Total work-related injury – Employee	Year									
	2015		2016		2017		2018		2019	
Number of Injuries (persons)	M	F	M	F	M	F	M	F	M	F
Total – Head Office (Bangkok)	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**
- Minor injury (First Aids)	0	0	0	1	0	0	0	0	0	0
- Moderate injury (Recordable work-related injuries)	0	0	0	0	0	0	0	0	0	0
- Severe injury (High-consequence)	0	0	0	0	0	0	0	0	0	0
Total – Operating Site	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**1**	**0**
- Minor injury (First Aids)	0	0	0	0	0	0	2	0	0	0
- Moderate injury (Recordable work-related injuries)	0	0	0	0	0	0	0	0	1	0
- Severe injury (High-consequence)	0	0	0	0	0	0	0	0	0	0
Total 2 Areas	**0**	**0**	**0**	**1**	**0**	**0**	**2**	**0**	**1**	**0**
Injury Frequency Rate (IFR) (person per one million hours worked)	0.00		0.00		0.00		4.64		2.33	
Injury Severity Rate (ISR) (day per one million hours worked)	0.00		0.00		0.00		2.32		60.54	

Lost Time Injury Rate (LTIR) = (Number of lost time injuries X 1,000,000) / Number of hours worked by gender
Male = 4.55 Female = 0.00
Lost Day Injury Rate (LDIR) = (Number of lost work days X 1,000,000) / Number of hours worked by gender
Male = 118.32 Female = 0.00
Injury Rate (IR) = (Total injuries X 1,000,000) / Number of hours worked by gender
Male = 4.55 Female = 0.00

Summary of Total Accidents – Employees of Affiliated Companies (Injury Frequency Rate: IFR) (Table 2)

Total work-related injury – Affiliated Companies	Year									
	2015		2016		2017		2018		2019	
Number of Injuries (persons)	M	F	M	F	M	F	M	F	M	F
Total – Affiliated Companies	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0	0
- Minor injury (First Aids)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0	0
- Moderate injury (Recordable work-related injuries)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0	0
- Severe injury (High-consequence)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0	0
Injury Frequency Rate (IFR) (person per one million hours worked)	N/A		N/A		N/A		N/A		0.00	
Injury Severity Rate (ISR) (day per one million hours worked)	N/A		N/A		N/A		N/A		0.00	

Lost Time Injury Rate (LTIR) = (Number of lost time injuries X 1,000,000) / Number of hours worked by gender
Male = 0.00 Female = 0.00
Lost Day Injury Rate (LDIR) = (Number of lost work days X 1,000,000) / Number of hours worked by gender
Male = 0.00 Female = 0.00
Injury Rate (IR) = (Total injuries X 1,000,000) / Number of hours worked by gender
Male = 0.00 Female = 0.00

In 2019, two moderate injuries (with recordable work-related injuries) occurred to two male outsourced workers (in cases of contractors and outsourced workers of affiliated companies) as follows:

1. The first case happened to one outsourced worker at the Nakornsawan Waterworks area. The accident involved a car collision by another party. The nature of the accident was a fall from a vehicle. At the moment of the accident, the worker was clearing the road surface after the end of the pipeline repairs works. The worker got small bruises. In response to the accident, all nigh-time pipeline repairs services will be reported to authorities. Additional lighting equipment will be provided at the dark areas. Signaling lights will be turned on to let other vehicles see the road at a safe distance. And a warning sign will be installed to give an advance warning about pipeline repairs works ahead. The workers will be required to wear black-light shirts to be clearly seen.

2. The second case happened to one outsourced worker at the Rayong Waterworks area. The person fainted and lost consciousness immediately. He collapsed and his head hit the floor and got wounds due to lack of sleep. In response to the accident, the supervisor is required to observe and initially check workers' physical conditions before starting works. Also, the supervisor must not allow workers to work multiple shifts or work for more than a specific number of hours. The workers shall be admonished to wear safety helmets before entering the operating site.

Number of Severity of Accidents – Contractors and Outsourced Workers of East Water Head Office (Table 3)

Project/Subcontractor Work/Outsourced Work	2018										2019									
	Total Injuries (persons)		Severity of injuries						Injury Frequency Rate	Injury Severity Rate	Total Injuries (persons)		Severity of injuries						Injury Frequency Rate	Injury Severity Rate
	M	F	Minor (First Aids)		Moderate (recordable work-related injuries)		Severe (high-consequence)		IFR	ISR	M	F	Minor (First Aids)		Moderate (recordable work-related injuries)		Severe (high-consequence)		IFR	ISR
			M	F	M	F	M	F					M	F	M	F	M	F		
Cleaning Service	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	0	0	0	0	0	0.00	0.00
Security Service	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	0	0	0	0	0	0.00	0.00
Gardening Service	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	0	0	0	0	0	0.00	0.00
Building Management Service	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	0	0	0	0	0	0.00	0.00

Total statistics on safety and work-related accidents of subcontractors for big projects: only for projects with contract 64 persons, excluding the operating sites

* Number of hours worked per person per year (Contractors) = 365 days x 8 hours = 2,920 hours

Lost Time Injury Rate (LTIR) = (Number of lost time injuries X 1,000,000) / Number of hours worked by gender
Male = 0.00 Female = 0.00
Lost Day Injury Rate (LDIR) = (Number of lost work days X 1,000,000) / Number of hours worked by gender
Male = 0.00 Female = 0.00
Injury Rate (IR) = (Total injuries X 1,000,000) / Number of hours worked by gender
Male = 0.00 Female = 0.00

Number and Severity of Accidents – Contractors and Outsourced Workers of East Water Operating Sites (Table 4)

Project/Subcontractor Work/Outsourced Work	2018										2019									
	Total Injuries (persons)		Severity of injuries						Injury Frequency Rate	Injury Severity Rate	Total Injuries (persons)		Severity of injuries						Injury Frequency Rate	Injury Severity Rate
	M	F	Minor (First Aids)		Moderate (recordable work-related injuries)		Severe (high-consequence)		IFR	ISR	M	F	Minor (First Aids)		Moderate (recordable work-related injuries)		Severe (high-consequence)		IFR	ISR
			M	F	M	F	M	F					M	F	M	F	M	F		
Industrial Water Production Project, Amata City Industrial Estate	0	0	0	0	0	0	0	0	0.00	0.00	0	0	0	0	0	0	0	0	0.00	0.00
2nd Nong Kho Pipeline Project	0	0	0	0	0	0	0	0	0.00	0.00	0	0	0	0	0	0	0	0	0.00	0.00
Thab Ma Raw Water Reserve Pond Project	0	0	0	0	0	0	0	0	0.00	0.00	0	0	0	0	0	0	0	0	0.00	0.00
Klong Kuen Pump Station	0	0	0	0	0	0	0	0	0.00	0.00	0	0	0	0	0	0	0	0	0.00	0.00
Security Service	0	0	0	0	0	0	0	0	0.00	0.00	0	0	0	0	0	0	0	0	0.00	0.00
Tree Maintenance Service	0	0	0	0	0	0	0	0	0.00	0.00	0	0	0	0	0	0	0	0	0.00	0.00
Cleaning Service	0	0	0	0	0	0	0	0	0.00	0.00	0	0	0	0	0	0	0	0	0.00	0.00
Shift Staff Service	0	0	0	0	0	0	0	0	0.00	0.00	0	0	0	0	0	0	0	0	0.00	0.00
Day Time Staff Service	0	0	0	0	0	0	0	0	0.00	0.00	0	0	0	0	0	0	0	0	0.00	0.00
Total statistics on safety and work-related accidents of subcontractors for big projects: only for projects with contracts 505 persons, excluding Head Office																				

* Number of hours worked per person per year (Contractors) = 365 days x 8 hours = 2,920 hours

Lost Time Injury Rate (LTIR) = (Number of lost time injuries X 1,000,000) / Number of hours worked by gender
Male = 0.00 Female = 0.00
Lost Day Injury Rate (LDIR) = (Number of lost work days X 1,000,000) / Number of hours worked by gender
Male = 0.00 Female = 0.00
Injury Rate (IR) = (Total injuries X 1,000,000) / Number of hours worked by gender
Male = 0.00 Female = 0.00

Number and Severity of Accidents – Contractors and Outsourced Workers of Affiliated Companies (Table 5)

Project/Subcontractor Work/Outsourced Work	2018										2019									
	Total Injuries (persons)		Severity of injuries						Injury Frequency Rate	Injury Severity Rate	Total Injuries (persons)		Severity of injuries						Injury Frequency Rate	Injury Severity Rate
	M	F	Minor (First Aids)		Moderate (recordable work-related injuries)		Severe (high-consequence)		IFR	ISR	M	F	Minor (First Aids)		Moderate (recordable work-related injuries)		Severe (high-consequence)		IFR	ISR
			M	F	M	F	M	F					M	F	M	F	M	F		
Outsourced Work for Koh Lan Waterworks	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	0	0	0	0	0	0.00	0.00
Outsourced Work for Ratchaburi Waterworks and Ratchaburi Glass Industry Co., Ltd.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	0	0	0	0	0	0.00	0.00
Outsourced Work for Hua Ror Waterworks	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	0	0	0	0	0	0.00	0.00
Outsourced Work for Nakornsawan Waterworks and Ayutthaya Glass Industry Co., Ltd.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1	0	0	0	1	0	0	0	16.38	32.75
Outsourced Work for Lakchai Mueang Yang Waterworks	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	0	0	0	0	0	0.00	0.00
Outsourced Work for Rayong Waterworks	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1	0	0	0	1	0	0	0	13.24	26.49
Outsourced Work for Nong Kham Waterworks	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	0	0	0	0	0	0.00	0.00
Outsourced Work for Bo Win Waterworks	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	0	0	0	0	0	0.00	0.00
Outsourced Work for Sattahip Waterworks	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	0	0	0	0	0	0.00	0.00
Outsourced Work for Chonburi Waterworks	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	0	0	0	0	0	0.00	0.00
Outsourced Work for Bang Pakong Waterworks	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	0	0	0	0	0	0.00	0.00
Outsourced Work for Chachoengsao Waterworks	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	0	0	0	0	0	0.00	0.00
Outsourced Work for Head Office	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	0	0	0	0	0	0.00	0.00
Total statistics on safety and work-related accidents of outsourced workers at the operating sites: 211 persons																				

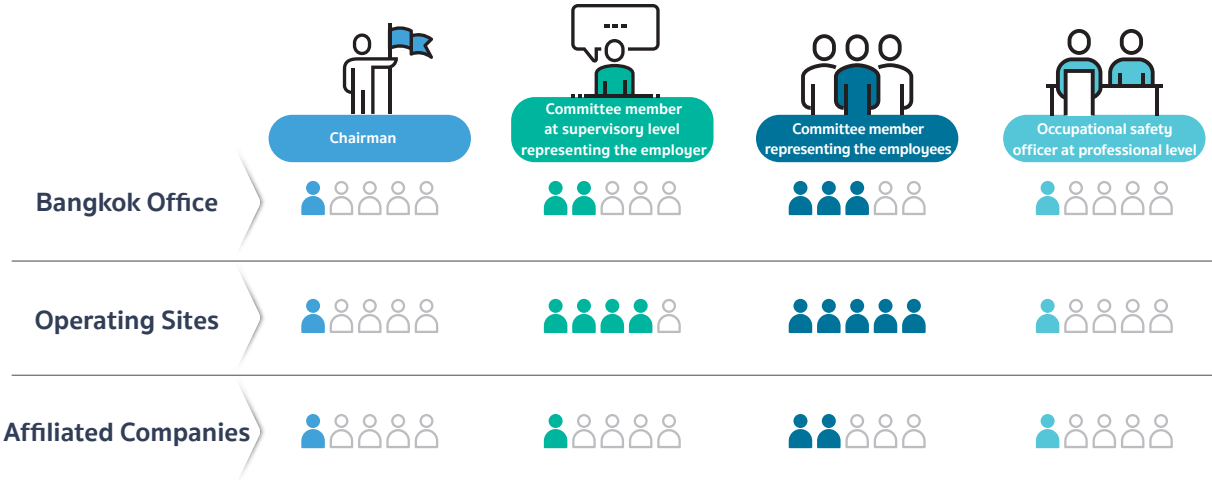
* Number of hours worked per person per year (Outsourced workers) = 365 days x 8 hours = 2,920 hours

Lost Time Injury Rate (LTIR) = (Number of lost time injuries X 1,000,000) / Number of hours worked by gender
Male = 4.40 Female = 0.00
Lost Day Injury Rate (LDIR) = (Number of lost work days X 1,000,000) / Number of hours worked by gender
Male = 8.79 Female = 0.00
Injury Rate (IR) = (Total injuries X 1,000,000) / Number of hours worked by gender
Male = 4.40 Female = 0.00

Based on the statistics of the past work-related accidents, most of the accidents occurred at operating sites. To ensure flexibility as well as fast and efficient incident management, the Company has established three Occupational Safety, Health and Environment (SHE) Working Teams, i.e. one attached to the Bangkok Head Office, one attached to the operating sites, and one attached to the affiliated companies, to thoroughly oversee the operations in the respective areas under responsibility. The number of working team members is as stipulated in the Ministry of Labour's Ministerial Regulation Re: "Prescribing of Standards for Administration and Management of Occupational Safety, Health and Environment B.E. 2549 (2006), Chapter 2 - Occupational Safety, Health and Environment Committee." The three working teams consist of the following members (Disclosure 403-1):

Roles and responsibilities of the 3 working teams cover:

1. Occupational health management
2. Working environment
3. Fire prevention and suppression
4. Working with machines
5. Confined spaces
6. Electrical safety
7. Health examination of employees
8. Workplace welfare
9. Safe weight limit
10. Work-related illness
11. Smoke-free area
12. Building control
13. Construction site safety



Activities undertaken in 2019

1. The Company revised its Occupational Safety, Health and Environment (SHE) manual to serve as a guideline for safety operations for the employees in all aspects. The manual complied with the relevant laws. The SHE Committee updated the manual and distributed the updated version to the employees and relevant parties. Amendments were made to the details in the section of the policy on safety, accidents, and losses of properties. Also, the contents regarding basic safety guidelines of the business group, safety rules, prevention and suppression of fire, and practices in the event of an earthquake were added.
2. The Company revised its manual on the inspection and assessment of the workplace environment and conditions and follow-up checks. This manual was produced as a reference for the formulation of standard operating procedures for the SHE management system. The Company conducted inspections or follow-up checks on operations with possible impacts on environmental management as well as possible risks to the Company's employees or properties, The Company also monitored the measures to reduce and control environmental pollution problems and the measures to mitigate risks or threats to ensure that the Company complied with relevant laws and regulations. This ensured that the inspection and follow-up checks were efficiently carried out for further studies of root causes and analysis of possible trends and changes. Besides, the Company identified measures to rectify and prevent problems with possible impacts relating to the SHE.
3. The manual on requests for permission to work at the East Water building (Work Permit System) was formulated as a tool for systematically controlling operations associated with high risks/hazards as well as for ensuring that safety check procedures are carried out before, during and after the operations. The system helps prevent any loss due to accidents and incidents arising from operations associated with high risks/hazards.
4. The Personal Protective Equipment (PPE) procurement and usage manual was formulated to control and ensure proper use of PPE equipment. The manual covers the steps of vendor selection, purchase order placement, disbursement-payment control, and actual usage.

Safety Activities

The Company has continuously organized safety activities for employees including:

1 Safety communication: A monthly journal on safety, health, and environment (SHE News) is issued to share news and create awareness of safety, good health, and environmental consciousness among employees.

2 Safety training: The training plan on occupational safety, health and environment has been established for each group of employees. Examples of the 7 courses facilitated in the past year are:

Behavior-Based Safety (BBS) Course

The Company facilitated the training in Behavior-Based Safety (BBS) to raise awareness about operational risks and a good attitude about safety in order to foster work safety behaviors and a corporate culture of safety among the business group employees.

Occupational Safety, Health and Environment (SHE) Course for General and New Employees for 2019

The Company group provided SHE trainings to new hires or those who were assigned new duties, workplaces, or machines or devices, which might cause harm to their life, physical/mental health, or wellness. This was in accordance with Section 16 of the Occupational Safety, Health and Environment Act B.E. 2554 (2011.)

3 Health Promotion and Office Syndrome Prevention

Back pain ranks no.1 in the list of work hazards that occur to workers and require medical treatment, followed by neck, shoulder, and head pain. The pain symptoms are caused by improper postures or long hours of working in front of computers without changing positions. The Company therefore held a panel discussion on the topic of "How to Prevent Office Syndrome" for its office employees. This was to help the office employees gain knowledge and understanding about the key principles to improve work conditions and proper postures.

Furthermore, the Company arranged a massage activity to help reduce office syndrome symptoms on a monthly basis with the support from the SHE Committee. The activity was aimed at preventing office-related health problems and office syndrome symptoms; promoting wellness at work; reducing stress and fatigue from sitting for a long time, creating a relaxing and happy work atmosphere.

4 Safety Day

The Company group arranged the Safety Day exhibition to raise awareness about work safety among employees so that they could learn how to work safely. The event showcased the methods to create work safety, including how to raise harmony within the organization and how to make a happy workplace. The said activity motivated the employees to advocate safety and was in accordance with the safety law which requires organizations to promote and share knowledge about safety to employees. This reflected the commitment of the management towards safety of the employees of the business group.

Emergency Management

The Company gives priority to emergency management to prepare for any incident and reduce any potential impact to the Company's employees and properties. Measures implemented by the Company in 2019 were:

1. The Business Continuity Management (BCM) Manual and the Business Continuity Plan (BCP) were formulated and tested at East Water's Head Office by a simulation of a flood event.

The test was conducted on the completeness of the BCP and knowledge/understanding about roles and responsibilities of various functional units, preparedness of alternate sites, communication and coordination between those working from home and those working at alternate sites as well as between internal functions and external entities.

2. Annual fire drill was held at East Water's Head Office and all operating sites (Chachoengsao, Chonburi and Rayong provinces) to prepare for evacuation and test the fire prevention system. In so doing, cooperation was obtained from all parties involved such as the local authorities, fire stations, police stations, hospitals, training centers, and neighboring buildings, and the desired results were achieved.

Responsibility for Construction Impact

(Disclosure 413-2)

In 2019, most of the construction projects took place across the Company's areas. Nevertheless, to prevent any possible impact on neighboring communities and the environment, the Company strictly enforced the standards of work control and safety of relevant regulatory bodies.

In 2019, the Company carried out 2 constructions projects as follows:

1 The project to enhance efficiency of water distribution at the Nong Plalai-Nong Kho Pump Station 2. The project objective was to enhance efficiency of the water distribution to water users in Chonburi and Rayong. There are 2 parts of the work:

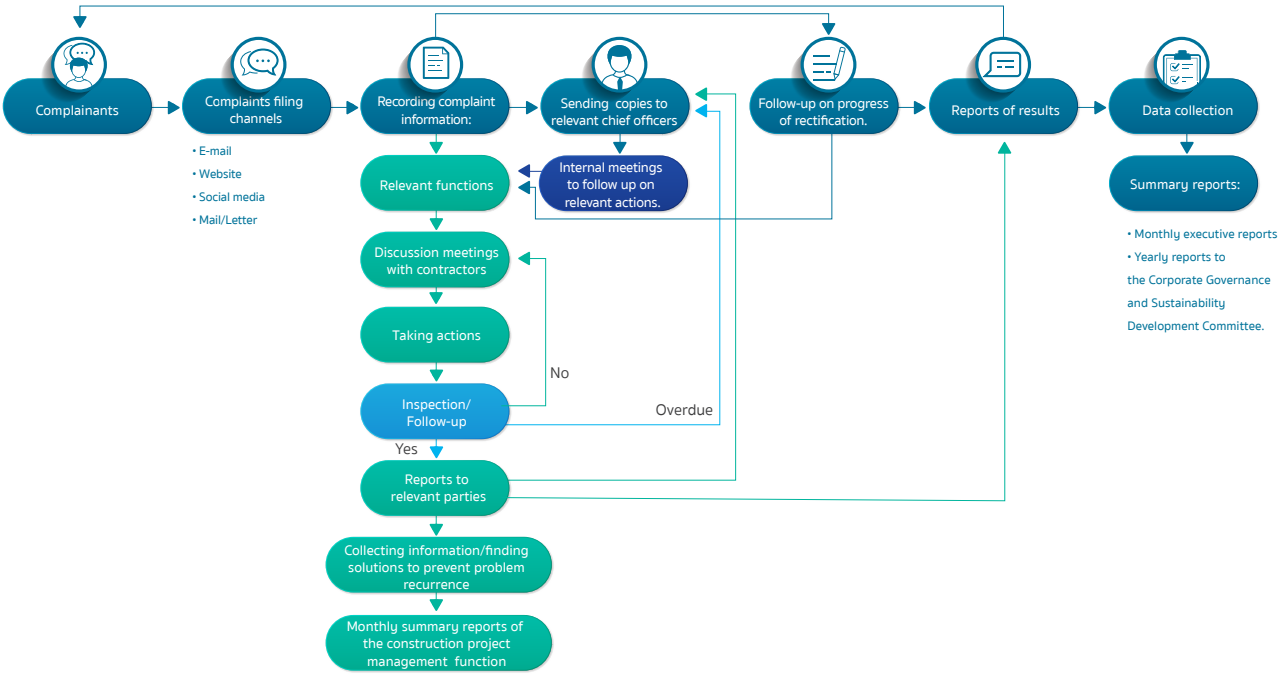
- 1.1 The construction of 10 km water transmission pipeline from the Highway 3191, Khao Noi Intersection, Ta Sit Subdistrict, Pluak Daeng District, Rayong to Hemaraj Eastern Seaboard Industrial Estate 3, Nong Sua Chang Subdistrict, Nong Yai District, Chonburi. The work is expected to complete in March 2020
- 1.2 The construction of a floating pump station in the Nong Plalai reservoir at the Nong Plalai Operation Office. The work is expected to complete in June 2020.

2. The project to construct an industrial (clarified) water production system. The water production system was designed using low-cost but efficient technology. The production capacity is 100,000 cubic meters per day. The system is a Centralized Clarified Water System that accommodates the water demand of the industrial customers, i.e. Amata City Industrial Estate and Gulf Power Plant. There are 2 parts of the work as follows:

- 2.1 The construction of an industrial water production system in the 8-rai area owned by the Company, in Pluak Daeng Subdistrict, Pluak Daeng District, Rayong. The work is expected to complete in June 2021.
- 2.2 The installation of an industrial water distribution pipeline for a length of 13 km. in Mabyangporn Subdistrict, Pluak Daeng District, Rayong and in Bo Win Subdistrict, Sriracha District, Chonburi. The work is expected to complete in June 2021.

In 2019, the operations of the aforesaid projects complied with guidelines for project management efficiency improvement regarding pollution prevention and construction impact mitigation. The standards for inspecting road restoration works along pipelines were met. The representative of the local authority that approved the construction also joined the work inspection and certification process. The Company held meetings with contractors and representatives of local authorities to notify them about the onsite construction operations. In case of any impact, the Company would jointly determine problems, root causes, and solutions to the problems as well as closely monitor progress updates on a weekly basis.

(Diagram showing the complaint handling process from the Company's construction project operations)



Complaints about impacts on neighboring communities

Based on the collection of all complaints from various channels about the Company's construction project execution, in 2019 there was no complaint from the said 2 projects. However, there was one complaint being filed in September 2019 as a result of the Prasae-Nong Plalai construction project which was substantially completed in 2017. The complaint was about the damage to Route 344 heading towards the Prasae reservoir. The Company conducted an inspection and found that the said road was damaged by the common uses of the community. The Company completed the repair service and dedicated the finished work to the community in November 2019.

Community Sustainability Projects (Disclosure 203-1)

"Communities" is one of the Company's priorities. The Company is committed to constantly improving the wellbeing of the communities so that they can grow together with the Company's business in a sustainable manner. Realizing the importance of shared water resources, the Company requires that water demand surveys be regularly conducted with the communities along the Company's raw water pipelines and the emerging communities nearby the construction projects. This is to enable the communities to access clean water sources and have sufficient water for consumption. The Company also holds meetings with community leaders and villagers to provide information on the projects; gathers the communities' needs and problems to find improvement and hardship mitigation solutions; and mobilizes the communities' participation in the creation of community wellbeing promotion programs along the Company's pipelines.

With the ongoing site visits, the Company developed the **"3 Creations and 3 Developments"** strategy, focusing on creating acceptance, creating security, and creating shared values towards sustainable development. The strategy was used to create partnerships with local government authorities and communities along the Company's 491.8 km. water grid. The effort was based on the philosophy of "Understanding, Reach, and Development." With its commitment to building acceptance through understanding, the Company created a wide range of community wellbeing promotion programs in order for the Company to understand the communities and vice versa. Such programs included vocational trainings (reducing expenses and increasing income according to the sufficiency economy philosophy), friendship football competitions, and annual Buddhist robe offering ceremonies. The Company conducted site visits to communities to provide corporate information as well as news updates for their better understanding of the Company's context and missions. The site visits also enabled the Company to learn about the communities' wants or expectations for further planning of strategies and activities to support the communities' sustainable development and advancement together with the Company's business.

Including the communities in the rectification, improvement and development of the communities' quality of life leads to the collaboration between the public, private, community, and educational sectors in creating community sustainability projects. The following two projects were launched:

1 Water Utility Promotion and Environmental Conservation Project

The Company joined hands with the communities to improve the quality of life of the communities in terms of water utilities and environmental conservation by preserving water and the environment. The relevant communities shall be able to access clear water sources for consumption. There are 3 development areas:

Project Area	Project	Targets and Actual Results	SDGs
Upstream (Raw water source)	1. Natural resource and water source restoration project 2. East Water Conservation Network project	1. Green zones were expanded with 5,000 trees to cover the area connecting 5 provinces in the eastern region annually. 2. 20,000 young trees were distributed annually. 3. Scholarships were granted to 80 students annually. The students were provided with knowledge and skills regarding science, water resource conservation, and water quality audits. 4. The overall satisfaction score from the youth joining the youth camp activity was more than 80.00% each year. 5. The quality of the natural water sources met surface water standards.	 4.4, 6.3, 6.6, 13.3, 15.1, 15.2
Midstream (Communities along the raw water pipelines)	1. Community tap water production control and maintenance project (integrated with the Fix It Center project) 2. CSR activities for communities along the Prasae-Klong Yai raw water pipeline 3. Water for communities project (including providing water for agriculture during the drought, water for consumption, and drinking water for public contribution activities held by government agencies and communities)	1. The tap water systems of 9 communities were improved annually. 2. In 2019, a total of 1,753 households had access to clean water for consumption. 3. In 2019, the Company supported and developed water utility systems for consumption and agriculture of the communities along the Prasae-Klong Yai raw water pipeline through a total of 9 projects with 8 beneficiary sub-district. 4. In 2019, the Company supported water for agriculture during the drought of 1,853,113.40 cubic meters, water for consumption of 7,301,500 liters, and drinking water of 854,217 liters. 5. The Company jointly developed one vocational course for 9 technical colleges.	 4.4, 6.3, 6.4, 6.6
Downstream (End-users, communities, educational institutes)	1. Wastewater treatment project on pilot school cafeterias	1. In 2020, there were 7 pilot schools at diamond level, one school per one education area. 2. The project led to cost savings as the school used the treated water of more than 300 liters per day for watering trees, raising fish, and producing multi-purpose liquid products (floor cleaners and effective microorganism (EM) liquid). The dissolved oxygen (DO) value in the reused water was higher than 4 mg./liter. 3. Increased agricultural products were used for lunch at schools. (The growing productivity was due to the water from the wastewater treatment system, EM fertilizer, and EM liquid.) 4. The school cafeterias met sanitary standards and measures of the Ministry of Education. 5. The students at 7 schools gained knowledge about wastewater treatment system as it was integrated as part of core subjects.	 2.1, 4.4, 6.3, 6.6

2 Learning Promotion Project

Target Group	Project	Targets and Actual Results	SDGs
Students at vocational level	1. Water-air aerator prototype	1. The Company jointly developed one vocational course for 4 technical colleges. 2. Four water-air aerators were installed in 4 technical colleges to mitigate water pollution. 3. The water quality was inspected after the installation of the prototype, resulting in improved DO values.	4.4, 6.3, 6.6
Youth and the general public	2. The East Water Sufficiency Economy Learning Center in Klong Kuen District.	1. The sufficiency economy learning center was established with the introduction of the application of water science in water management for improved agricultural productivity according to the sufficiency economy philosophy. The center has become a tourist spot unique to the district. 2. Over 100 visitors toured the center per year. 3. In 2019, total sales of agricultural products and visit passes were Baht 212,483.	2.1, 2.4, 4.4, 6.3, 6.6, 8.9
Disabilities	3. Computer training program for students with disabilities	1. There were 100 students with disabilities participating in the training each year. 2. 10.00% of the training participants of each class were successfully hired by business organizations.	4.5

Summary of Operations of Community Sustainability Projects

Water Utility Promotion and Environmental Conservation Projects

- *Upstream*

The Company together with the communities around the raw water sources of the Company and neighboring areas conducted 2 projects relating to the restoration of natural resources and conservation of water resources as follows:

1. Natural Resource and Water Source Restoration Project

Conservation and Restoration of Community Forest with Community Participation through the People's State Concept Since 2017, the Company has joined the Community Forest Network in the Five Provincial Borders of the Eastern Region to conduct the project to conserve and restore community forests with community participation according to the People's State concept. Under the project, the two community forest areas in Baan Sampran, Klong Ta Krao Subdistrict, Tha Takieb District, Chachoengsao and Baan Nong Mueang, Chum Sang Subdistrict, Wang Chan District, Rayong have been restored and maintained to be fertile and sustainable.

In 2019, the Company cooperated with the Community Forest Network in the Five Provincial Borders of the Eastern Region in enhancing and maintaining the community forests of the 2 areas through a number of activities such as building walkways to survey the community forests, making fire protection lines, and growing 5,300 trees, etc.

2. East Water Conservation Network Project

In 2014, the East Water Conservation Network project was originated as a continuation from the East Water Young Leader Camp project which ran from 2007 to 2012, and since then a series of project activities have been conducted. The East Water Conservation Network project is the collaboration between the Company and the environmental warriors/water inspectors of the Chachoengsao Environmental Conservation Association and the Water Quality Monitoring Center of Pluak Daeng District, Rayong to integrate the knowledge of water quality inspection activities of the said two groups with the knowledge imparted at the East Water Young Leader Camp project. The project is aimed at exchanging knowledge and experiences between the two agencies in monitoring and inspecting water quality. The project also equips youth with science skills and encourages youth to care, cherish and realize the values and importance of water resources as well as protect their water sources to ensure sustainability. The project has been joined by 12 participating schools with 40 students from Chachoengsao and 40 students from Rayong. The students who have completed the East Water Young Leader Camp can apply the knowledge gained from the activity to their water quality audits of their home town water sources. Those students will also lead the collaboration with the local communities in maintaining and preserving the water sources to have better water quality. The project is set to produce 80 young water conservators from the East Water Conservation Network project per year. The overall satisfaction score of the participating students was 88.38%.

- ***Midstream*** The Company partnered with the communities along the raw water pipelines in developing 3 projects to promote the wellbeing of the communities and enable them to access clean water sources for consumption and agriculture as follows:

1. Community Tap Water Production Control and Maintenance Project (integrated with the Fix It Center project)

In 2008, the survey on water requirement and water level as well as water sources for consumption of the communities along the raw water pipeline (with the aim to improve community access to clean water for their better quality of life) revealed that many village tap water systems could not operate efficiently and were misused. The said situation affected the quality of life of the people in the communities. The Company, as the raw water business operator, joined hands with Universal Utilities PCL. in conducting the project to provide repairs and maintenance services for and training in management of village tap water systems. The project is intended to renovate the tap water systems of the villages and impart the knowledge in village tap water system management to the village tap water committees as well as local administrative organization officers, based on the commitment to improve the quality of life of the people in the communities and their access to clean water sources.

In 2019, the Company and the Eastern Institute of Vocational Technology executed the **Community Tap Water System Production Control and Maintenance project (integrated with the Fix It Center project)** for the second consecutive year. Through the project, the Company provided repair and maintenance services for the community tap water systems in a total of 9 locations as follows:

College	Location for Repair of Community Tap Water System	Beneficiary Communities (Households)
Rayong Technical College	Moo 10, Ban Mab Thong, Nong La Lok Subdistrict, Baan Kai District, Rayong	320
Pattaya Technical College	Nong Plalai Subdistrict Municipal Office, Bang La Mung District, Chonburi	350
Chanthaburi Technical College	Moo 5, Nam Pen Subdistrict, Khao Chamao District, Rayong	128
Trat Technical College	Moo 6, Baan Nong Nok Eieng, Noen Sai Subdistrict, Mueang District, Trat	85
Chonburi Technical College	Moo 11, Baan Noen Krabok, Tha Bun Mi Subdistrict, Ko Chan District, Chonburi	20
Sattahip Technical College	Moo 5, Soi Thuenwithi, Phlu Ta Luang Subdistrict, Sattahip District, Chonburi	80
Map Ta Phut Technical College	Moo 11, Baan Sak Mai Ruak, Nong La Lok Subdistrict, Baan Kai District, Rayong	500
Baan Kai Technical College	Moo 5, Baan Choeng Nern, Nong La Lok Subdistrict, Baan Kai District, Rayong	240
Chonburi Technical College	Moo 10, Tha bun Mi Subdistrict, Ko Chan District, Chonburi	30

2. CSR Activities for Communities along the Prasae-Klong Yai Raw Water Pipeline (Disclosure 203-1)

As part of the Company's project to divert water from the Prasae reservoir to the Klong Yai reservoir, the Company organized the meeting to integrate water management efforts among all stakeholders including the public and private sectors and local communities. The meeting resolution led to the improvement of the community wellbeing by supporting the communities to have equitable access to adequate water supply and to have additional water supply during the drought period. The Company successfully diverts water to the community tap water systems for 15 communities along the water pipelines free of charge. The project, generating year-round water supply, benefits water users of over 4,000 households. In 2019, the Company supported the water supply of 1,853,113.40 cubic meters to the communities along this water pipeline.

In 2015, the Company signed an MOU with the Royal Irrigation Department to divert water between the Prasae and the Klong Yai reservoirs through the pipeline. The Non-Agricultural Irrigation Management Group in the Klong Yai basin was established. The group stipulated criteria for systematic allocation of social and environmental budgets in 2016. In parallel, the CSR Budget Management Committee, consisting of water users, the Royal Irrigation Department, and local government bodies, was established to jointly consider and approve relevant projects and budgets. The Company sponsors budgets to improve the quality of life of the communities with a view to promoting access of the communities along the pipepline to clean water for consumption and agricultural uses and reducing hardship of the people during droughts as a result of today's global climate change.

During 2015 - 2018, the Company sponsored CSR budgets totaling Baht 13,005,883 for 29 development projects along the Prasae-Klong Yai water pipeline, covering 10 sub-districts and 3 districts. (Please refer to the details in Page 92-93 of the Sustainability Report 2018.)

In 2019, the Company sponsored CSR budgets totaling Baht 3,420,450 for 9 development projects along the Prasae-Klong Yai water pipeline as follows:

15 points

Water supply pipeline with raw water distribution points

Pipeline

New water distribution point

Old water distribution point

01 May 2019

	Subdistrict/District/Province
1. Repair work of water pipeline, expansion zones (zone 1 and zone 3)	Plong Ta lam Subdistrict, Wang Chan District, Rayong Chum Sang Subdistrict, Wang Chan District, Rayong Pa Yup Nai Subdistrict, Wang Chan District, Rayong Huai Yang Subdistrict, Klaeng District, Rayong
2. Repair work of roads long water distribution canals	Ban Na Subdistrict, Klaeng District, Rayong
3. Repair work of water pipeline, expansion zone 4	Krasae Bon Subdistrict, Klaeng District, Rayong
4. Renting of power transformer	Wang Wa Subdistrict, Klaeng District, Rayong
5. Repair work of water gates and a building with access to the Sa Yai Pien pond of the zone 4 pump station	Cham Kho Subdistrict, Khao Chamao District, Rayong

02 September 2019

	Subdistrict/District/Province
1. Canal dredging work in front of the zone 3 station	Wang Wa Subdistrict, Klaeng District, Rayong

03 December 2019

	Subdistrict/District/Province
1. Temporary weir work in the Klong Nam Sai project (Moo 1 and Moo 6)	Cham Kho Subdistrict, Khao Chamao District, Rayong
2. Temporary weir work in main canals (left side)	Krasae Bon Subdistrict, Klaeng District, Rayong
3. Renting of power transformer for the zone 3 pump station	Wang Wa Subdistrict, Klaeng District, Rayong

3. Water for Communities

The Company provided clean water for various community activities via the forms of water cups (220 ml.), water bottles (350 ml.), water mobile services (4 vehicles), and water tubes (5 sets). In 2019, the Company supported a total of 8,155,717 liters of clean water to the communities.

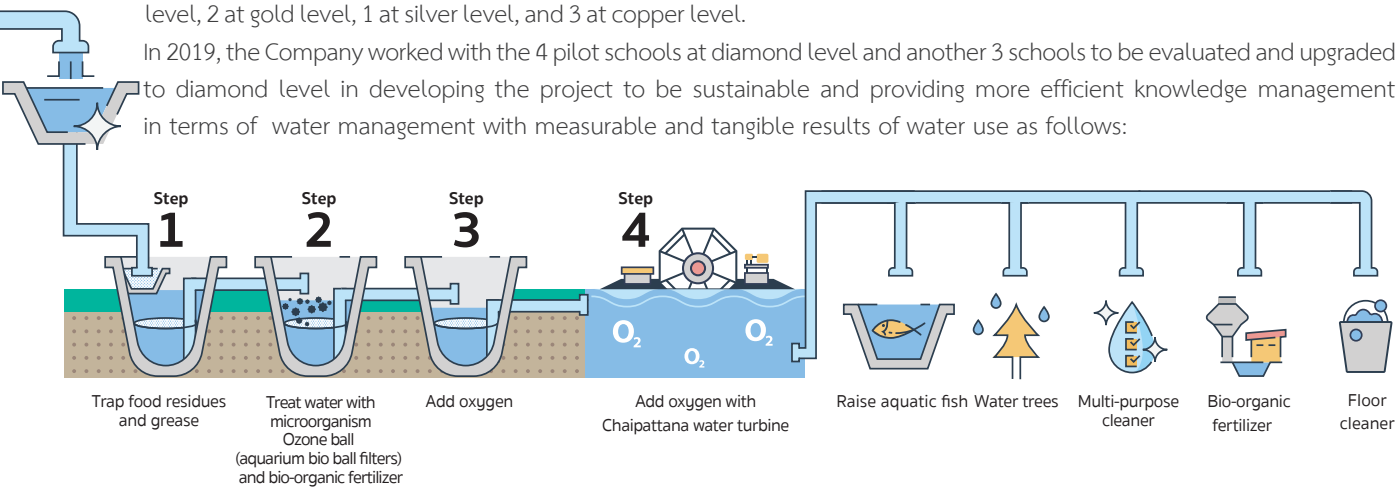
- *Downstream*

Wastewater Treatment Project on Pilot School Cafeterias

During 2011-2013, the Company had established the wastewater treatment project on pilot school cafeterias to provide hands-on knowledge and guidance about the design and operations of the wastewater treatment system for participating schools. A budget was granted to support the transformation of the existing wastewater treatment system by using the model of the Chachoengsao Provincial Office of Natural Resources and Environment. Later in 2014, the Company evaluated the results from the system improvement, installation, and operations to learn about problems and suggestions for further project development.

In 2016, the Company joined the 7 Primary Educational Service Area Offices (in Chachoengsao, Chonburi, and Rayong provinces) in carrying out the **wastewater treatment project on pilot school cafeterias** through the improvement of the earlier project to be more sustainable and sustainability and raising awareness among the youth and school personnel on water conservation as water is a vital to leading a life. The project provided the source of knowledge in water management practices to the youth and neighboring communities. The project evaluation criteria were divided into 5 topics including 1) Installation and employment of the wastewater treatment system, 2) Supervision of the wastewater treatment system, 3) Improvement of water quality at the last stage, and 4) Use of the treated water, and 5) Dissemination of the knowledge about wastewater treatment system inside and outside of school. **The project goal was to have 1 pilot school at diamond level per educational service area, with a total of 7 schools, by 2020.** In 2018, the Company granted awards to the total 10 participating schools, 4 at diamond level, 2 at gold level, 1 at silver level, and 3 at copper level.

In 2019, the Company worked with the 4 pilot schools at diamond level and another 3 schools to be evaluated and upgraded to diamond level in developing the project to be sustainable and providing more efficient knowledge management in terms of water management with measurable and tangible results of water use as follows:

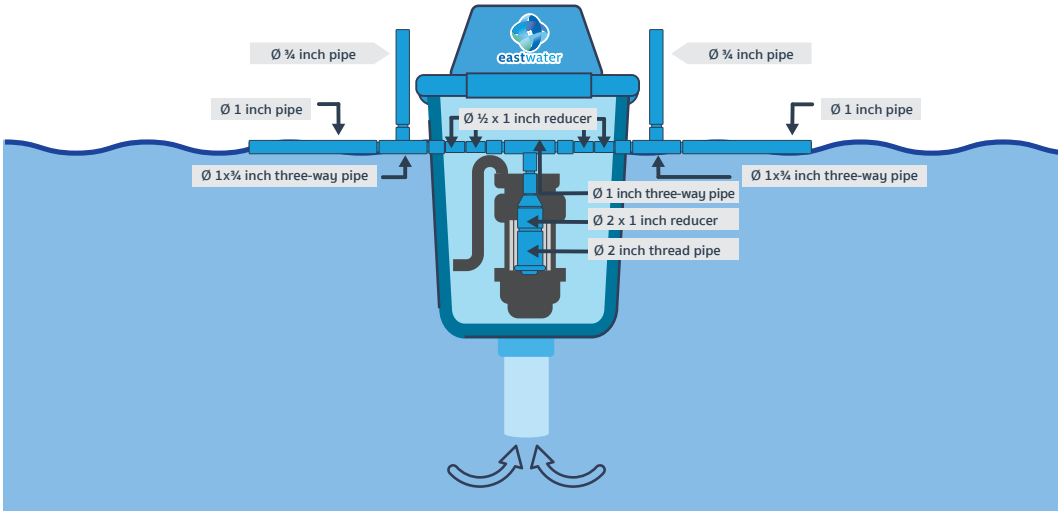


Learning Promotion Project

1. Water-air Aerator Prototype

Following the contest on water management innovation by college students using the 3R (Reduce, Reuse, Recycle) principles in 2010, The Company came up with an idea to turn the classroom innovation into tangible community benefit. The Company selected a water-air aerator innovation invented by Ubol Ratchathani Technical College (receiving a consolation prize). The innovation was implemented through the collaboration between the environmental warriors/water inspectors, the members of the Chachoengsao Environmental Conservation Association, the Water Quality Monitoring Center of Pluak Daeng District, Rayong, and the Ubol Ratchathani Technical College. The knowledge of the construction, installation, and functioning of the aerator was expanded and offered to another 4 educational institutes in Chachoengsao, Chonburi, and Rayong so that they become knowledge sharing centers for people in the communities. In 2018, the Chaipattana Foundation implemented the recommendations to improve the efficiency of the aerator prototype.

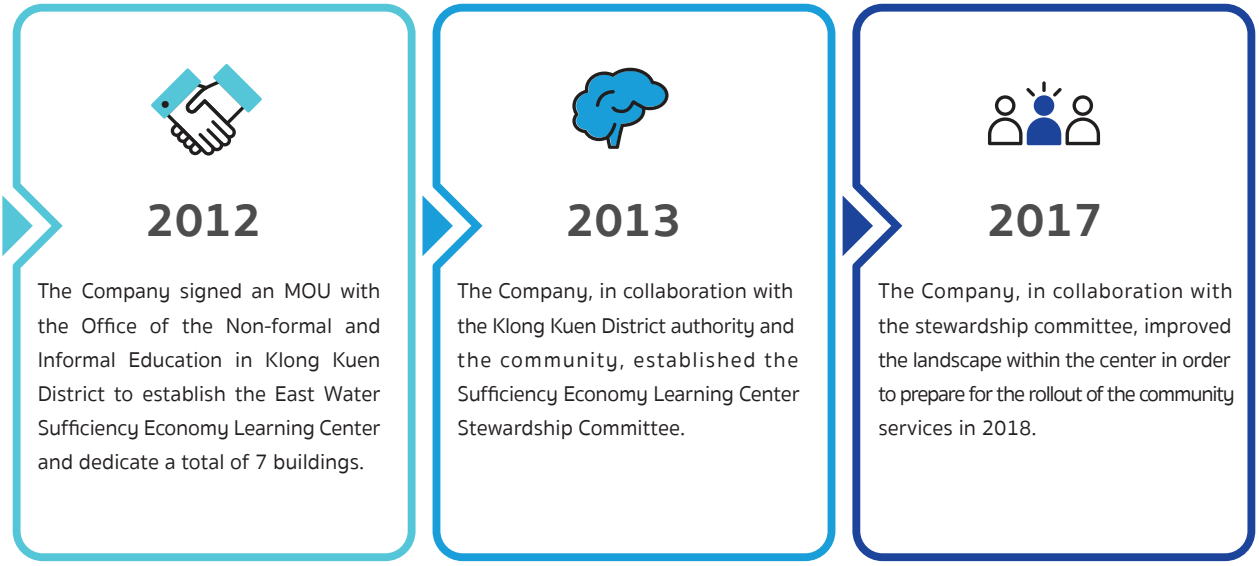
In 2019, the Company joined hands with the 4 education institutes in developing an aerator prototype and installing it for efficiency testing in 4 water sources. The collaboration was aimed at developing a more comprehensive version of the aerator prototype, especially in terms of its functioning capabilities, user-friendliness, and easy construction process, while making best use of the budget on supplies and energy. Also, the knowledge gained from the project shall be imparted to the community.



College	Location	Before Installation	2 Months After Installation
Baan Kai Technical College	The raw water reserve pond for tap water production of the village, Baan Choeng Nern Community, Moo 5, Nong La Lok Subdistrict, Baan Kai District, Rayong	pH = 6.00 DO = 4.00 mg/l	pH = 7.00 DO = 10.60 mg/l
Rayong Technical College	Phra Buddha Angkhiros Hall, Sri Mueang Park, Tha Pradu Subdistrict, Mueang District, Rayong	pH = 8.00 DO = 8.00 mg/l	pH = 7.50 DO = 9.20 mg/l
Chachoengsao Technical College	Pitulathirat Rangsarit Temple, Na Mueang Subdistrict, Mueang District, Chachoengsao	pH = 8.00 DO = 8.00 mg/l	pH = 7.50 DO = 12.40 mg/l
Pattaya Technical College	Jukkacher Community Public Park, Bueng Subdistrict, Sriracha District, Chonburi	pH = 8.50 DO = 8.00 mg/l	pH = 7.50 DO = 10.90 mg/l

2. East Water Sufficiency Economy Learning Center in Klong Kuen District

On the occasion of the 20th anniversary in 2012, the Company adopted His Majesty King Rama 9's sufficiency philosophy as a guideline for its concrete practices under **the East Water Sufficiency Economy Learning Center situated on the 22-rai plot of land in Klong Kuen Subdistrict, Klong Kuen District, Chachoengsao.** The compound serves as a learning area for conducting one's life according to the Sufficiency Economy and New Theory Farming. Activities to increase income and reduce expenses of farmers are held.



In 2018, the East Water Sufficient Economy Learning Center, Klong Kuen, was ready and opened to provide services to interested people and visitors. There are learning bases on offer such as organic rice growing, pesticide-free vegetation, wastewater management, bio-organic fertilizer production to reduce agricultural costs, animal farming, and paddy field demonstration. The farmers can gain greater learning and career skills together through the learning by doing concept. The produces from the learning center are sold in the market, such as dried mango, coconut, rice, vegetables, etc., to generate income to the organization for sustainable growth. The East Water Sufficient Economy Learning Center serves visitors from the communities and government agencies who come to use services at the center. In 2019, there were a total of 1,540 visitors to the learning center and proceeds from the sales of produces and visitor passes were Baht 212,483.

3. Computer Course for Students with Disabilities Class 7, 2019

Since 2012, the Company, in collaboration with the Office of the Non-formal and Informal Education in Chachoengsao, has offered the computer courses for the disabled students to enable the disabled to apply the knowledge to their occupation and job application. The project guest speakers were the local officers from the Office of the District Non-formal and Information Education in 11 districts in Chachoengsao. In 2019, there were 120 disabled students who successfully completed the course.

Based on the result monitoring of the graduates, it was found that:

18 out of 110 participants were successfully employed, or 16.36%.

12 out of 105 participants were successfully employed, or 11.43%.

28 out of 105 participants were successfully employed, or 26.67%.

28 out of 175 participants were successfully employed, or 16.00%.

18 out of 120 participants were successfully employed, or 15.00%.

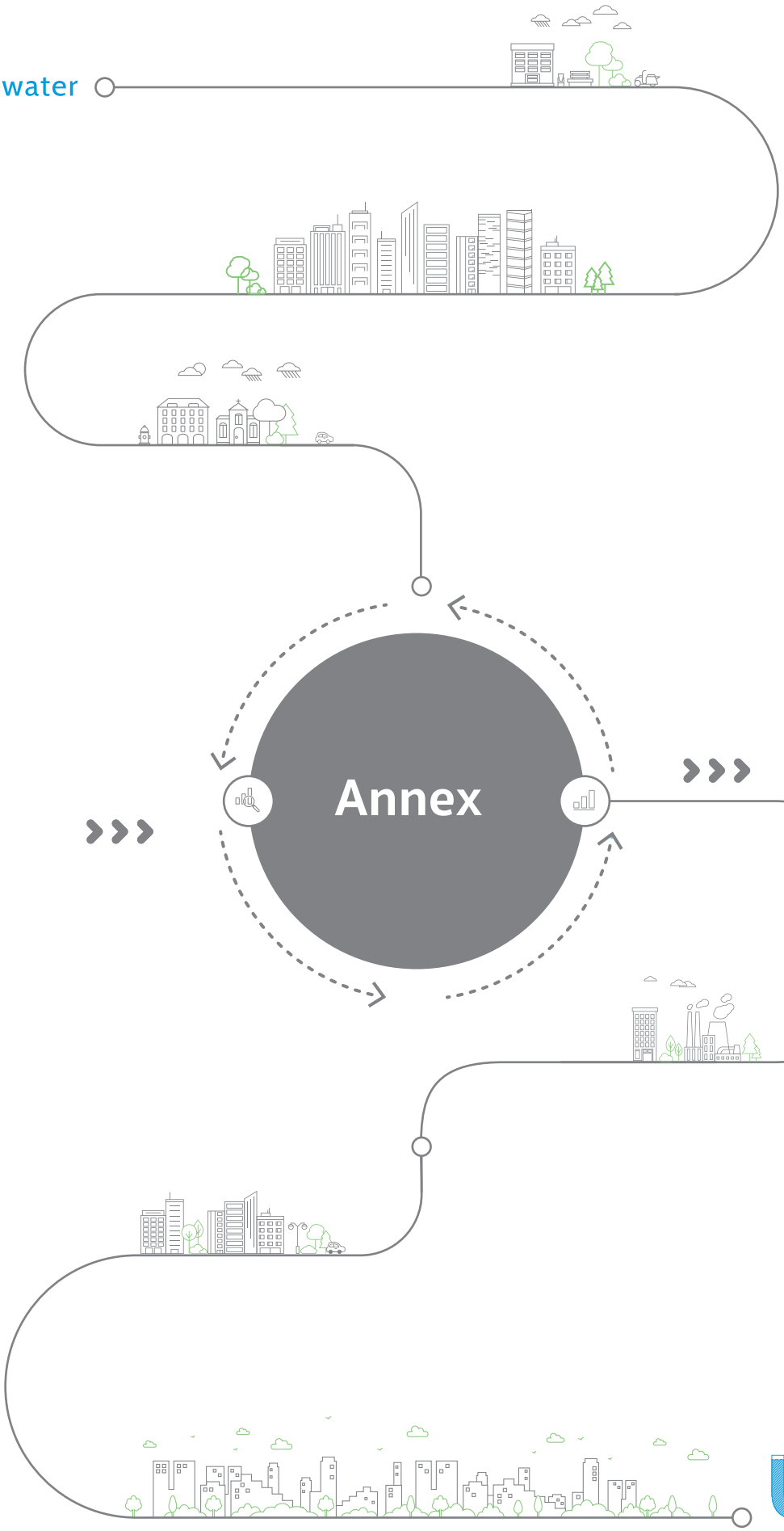
Wellbeing Promotion Project

1. Vocational trainings (reducing expenses and increasing income according to the sufficiency economy philosophy)

2. Friendship football competitions

3. Annual Buddhist robe offering ceremonies

eastwater



URD

Table showing comparison of satisfaction level by service category of raw water business of 2017-2019

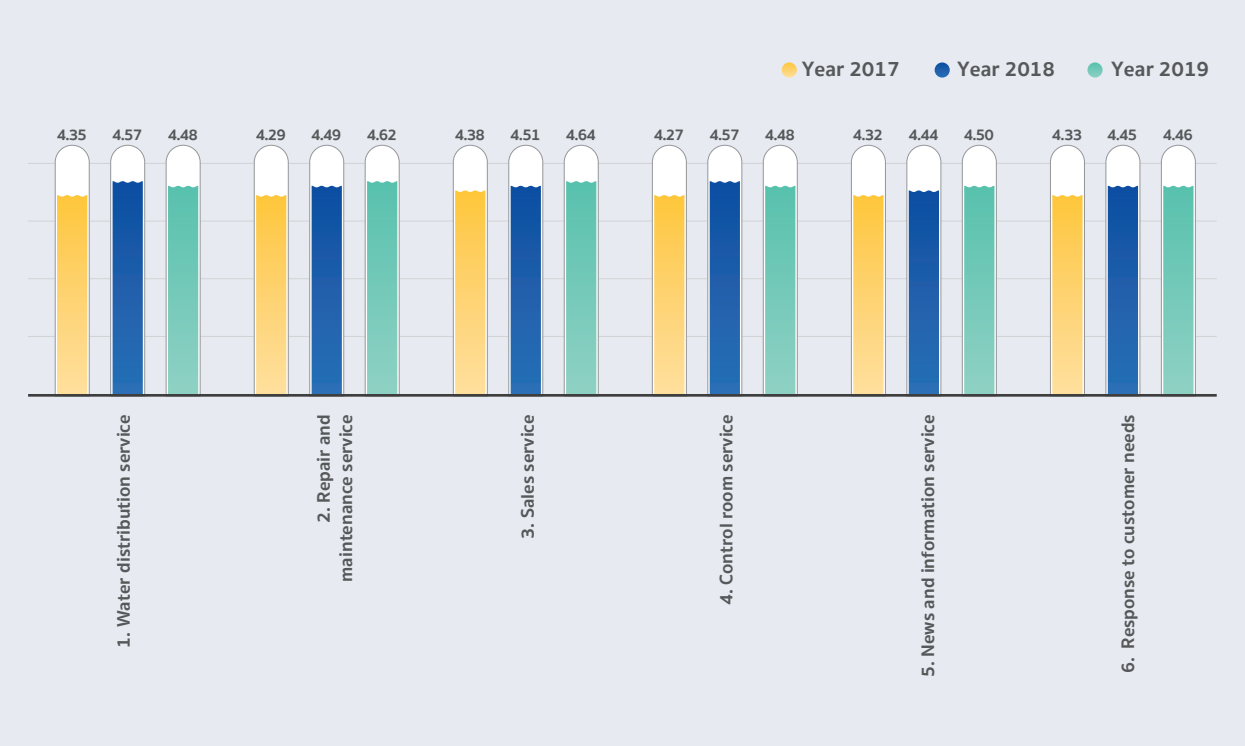


Table showing comparison of satisfaction level by service category of tap water business of 2017-2019

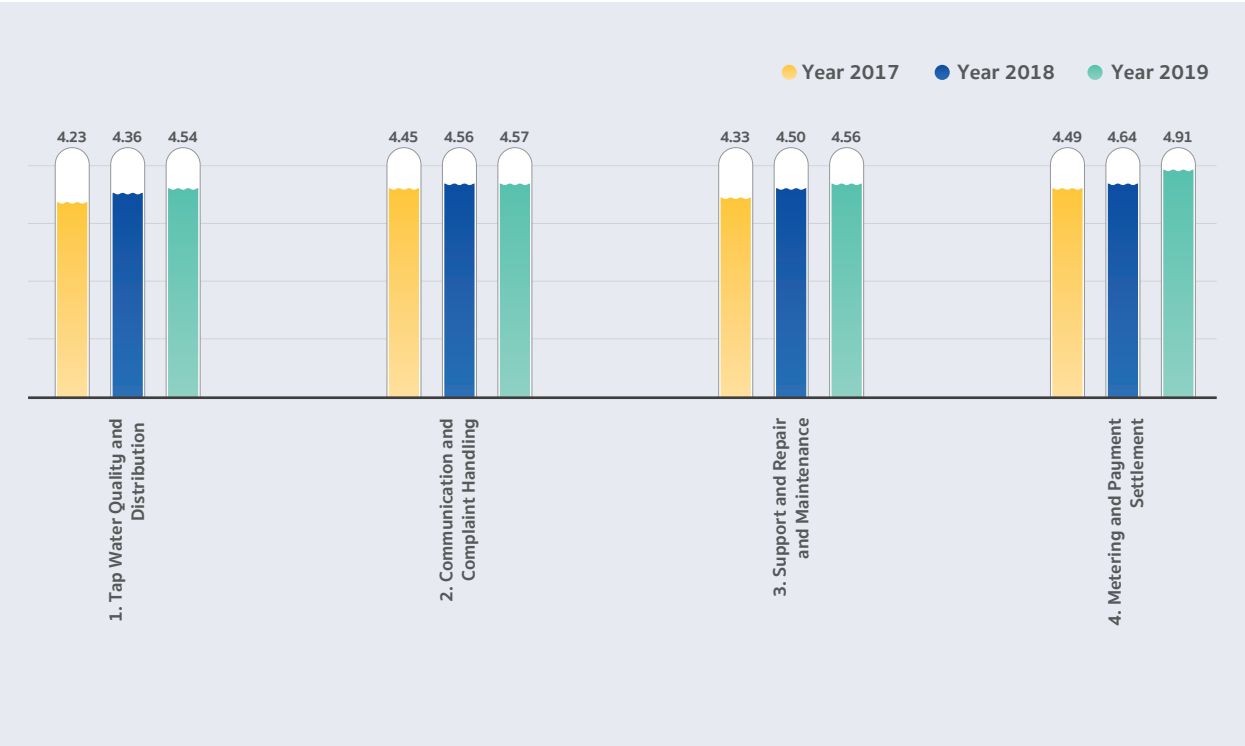


Table of Water Sources Utilized by the Company in 2018-2019 (Disclosure 303-1, 303-2, 303-3, 303-5)

Water Sources	Importance of Water Sources to Local Communities	Storage Capacity
Volume of Water		10^3 Million liters
Rayong areas		
1. Prasae Reservoir	• To supply water to plantation areas in Prasae project • To prevent saltwater intrusion • To prevent flooding in Klaeng District, Rayong • To reserve raw water for eastern seaboard industrial estates • Volume of water flowing into the reservoir is 151.92 million m^3. (Source: Nationwide Reservoirs, the Royal Irrigation Department)	248.00
2. Nong Pla Lai Reservoir	• To supply water to plantation areas in the Baan Kai Agricultural project in Rayong • To prevent flooding in Rayong • To supply water for general and industrial consumption with a future plan to supply water to Sattahip areas for industrial project expansion • To be fish breeding grounds and areas for tourism and recreation • Volume of water flowing into the reservoir is 116.19 million m^3. (Source: Nationwide Reservoirs, the Royal Irrigation Department)	163.75
3. Dok Krai Reservoir	• To supply water to plantation areas in the Baan Kai Agricultural project in Rayong • To prevent flooding in Rayong • To supply water for general and industrial consumption • To be fish breeding grounds and areas for tourism and recreation • Volume of water flowing into the reservoir is 57.76 million m^3. (Source: Nationwide Reservoirs, the Royal Irrigation Department)	79.41
Chonburi areas		
4. Bang Phra Reservoir	• To support agriculture in 8,500 rai of land • To supply water for general and industrial consumption • To be fish breeding grounds and areas for tourism and recreation • Volume of water flowing into the reservoir is 36.82 million m^3. (Source: Nationwide Reservoirs, the Royal Irrigation Department)	117.00
5. Nong Kho Reservoir	• To supply water to current creeks to support agriculture in 7,500 rai of land • To supply water for general and industrial consumption • To be fish breeding grounds and areas for tourism and recreation • Volume of water flowing into the reservoir is 10.89 million m^3. (Source: Nationwide Reservoirs, the Royal Irrigation Department)	21.40
Chachoengsao areas		
6. Bang Pakong River (Water Stress) Source: https://www.wri.org/our-work/project/aqueduct/	• To maintain the ecological system • To deter the flow of saltwater • To be a water source for general, agricultural and industrial consumption • Average volume of natural water is 3,344 million m^3. (Source: Large Scale Project Office, the Royal Irrigation Department)	-
7. Private River (Water Stress) Source: https://www.wri.org/our-work/project/aqueduct/		-
8. Rainwater from Samnak Bok Pond		-
Total		

Volume of Water for Management			Total Dissolved Solids (≤ 1,000 mg/liter)	Total Dissolved Solids (≤ 1,000 mg/liter)	Remark
Allocated Water (as per Permit)	Pumped Water (2018)	Pumped Water (2019)			
10^3 Million liters	10^3 Million liters	10^3 Million liters	10^3 Million liters	10^3 Million liters	10^3 Million liters is One Million Cubic Meters
107.00	38.77	74.91	74.91	-	During 2018 - 2019, the Company used water from Prasae-Klong Yai Pipeline for 35.55 million m^3 and from Prasae-Nong Pla Lai 34.82 million m^3.
120.00	115.49	145.61	145.61	-	During 2018 - 2019, the Company used water more than the amount specified in the permit due to small water volume in Dok Krai Reservoir. Hence, the Company reduced such water consumption and consumed more water in Nong Pla Lai Reservoir instead.
116.00	77.11	68.36	68.36	-	The allocated water volume as per permit of 116 million m^3 is more than the reservoir storage capacity as the water volume flowing into the reservoir during the year is included.
8.00	5.88	5.64	5.64	-	The Company obtained the permit for water consumption from Bang Phra Reservoir for 8.00 million m^3 and was allocated for 3.67 million m^3. (The Company consumed all allocated water of 3.67 million m^3 and the water from Bang Pakong River for 1.97 million m^3.)
16.70	10.81	13.02	13.02	-	During 2018 - 2019, the Company consumed 17.60 million m^3 exceeding the volume as specified in the permit due to 2 main reasons – Nong Kho Reservoir dredging from Chonburi Irrigation Project, and providing water pumping service in replace of the pumping system that was out of order requested by Sriracha Provincial Waterworks Authority.
27.00	6.05	14.96	14.96	-	The Company had water pumping operation only in the rainy season and in compliance with the regulation of Chachoengsao province. A portion of total water was converted to store in Bang Phra Reservoir and Sam Nak Bok Reserved Pond to reserve water during dry season for Chachengsao and Chonburi areas. In 2019, the Company pumped water from Bang Pakong River for distributing to Chanchengsao, and reserve the remaining water in Samnak Bok Reserve Pond for 1.01 million m^3 and Bang Phra Reservoir for 8.22 million m^3. The Company monitors and conducts water quality inspection continuously to take such data into consideration of water pumping from Bang Pakong River. The pumping operation will be commenced when the water level in Bang Pakong River in front of the Ban Pho District Office has salinity lower than 1 g/liter (The water quality is inspected by Chachoengsao Irrigation Project). The water pumping will be stopped at the end of rainy season or the water level in Bang Pakong River at the same location has salinity more than 1 g/liter.
-	8.00	12.02	12.02	-	The Company distributed water from the Private water sources in Chachoerngsao area duing dry season and store in Samnakbok Reserve Pond for 0.12 million m^3 and monitors the situation of water volume in the area to prevent any impact to the local communities nearby.
-	0.26	0.26	0.26	-	This water volume is 5.59% of the water in the Samnak Bok Pond calculated from the monthly average rainfall x water surface area (Refer to the average rainfall in the Feasibility Study and Detailed Design of Raw Water Pipelines, Prasae Reservoir – Nong Kho Reservoir – Bang Phra Reservoir, Faculty of Engineering, Kasetsart University, February 2018.)
394.70	**262.37**	**334.78**	**334.78**	**-**	

Water Volume in Water Sources of Affiliated Companies for Tap Water Production in 2019 (Disclosure 303-3, 306-1)

Raw Water Provider	Type of Water Source	Waterworks Entity	Description	Water Volume
Contract Parties	Surface Water	Chachoengsao, Bang Pakong, Chonburi, Rayong, Bo Win, Sattahip, Lakchai Mueang Yang, Nakhonsawan	Water volume used for tap water production (10^3 liters.)	100,405,324.41
			Water volume used for tap water production (10^3 liters.) Total dissolved solid (TDS) value ≤ 1,000 mg./liter	100,405,324.41
			Water volume used for tap water production (10^3 liters.) Total dissolved solid (TDS) value > 1,000 mg./liter	-
			Total tap water distributed from the production system (10^3 liters.)	99,411,435.50
			Total water loss in the production system (10^3 liters.)	993,888.92
Universal Utilites PCL. (UU)	Surface Water	Nong Kham, Ratchaburi, Hua Ro	Water volume used for tap water production (10^3 liters.)	15,437,773.00
			Water volume used for tap water production (10^3 liters.) Total dissolved solid (TDS) value ≤ 1,000 mg./liter	15,437,773.00
			Water volume used for tap water production (10^3 liters.) Total dissolved solid (TDS) value > 1,000 mg./liter	-
			Total tap water distributed from the production system (10^3 liters.)	15,300,730.00
			Total water loss in the production system (10^3 liters.)	137,043.00
	Seawater	Koh Lan, Koh Samui	Water volume used for tap water production (10^3 liters.)	1,051,165.00
			Water volume used for tap water production (10^3 liters.) Total dissolved solid (TDS) value ≤ 1,000 mg./liter	-
			Water volume used for tap water production (10^3 liters.) Total dissolved solid (TDS) value > 1,000 mg./liter	1,051,165.00
			Total tap water distributed from the production system (10^3 liters.)	1,038,682.00
			Total water loss in the production system (10^3 liters.)	12,483.00

Remarks :

- The Rayong Waterworks used TS value instead of TDS value.
- The Lakchai Mueang Yang Waterworks and the Chonburi Waterworks did not check/measure TDS value. They used surface water value instead. Both entities were in the same area of the Rayong Waterworks with the TDS value of less than 1,000 ppm. Thus, it was considered that the qualities of the raw water of the Lakchai Mueang Yang Waterworks and the Chonburi Waterworks were of the same as those of the Rayong Waterworks. Their TDS value should not exceed 1,000 ppm.

East Water's Employee Information (Disclosure 102-7, 102-8)

Employees	2016		2017		2018		2019	
	Number (person)	Percent	Number (person)	Percent	Number (person)	Percent	Number (person)	Percent
Total employees	**168**	**100**	**214**	**100**	**221**	**100**	**229**	**100**
By gender								
Male	93	55.36	105	49.07	107	48.42	117	51.09
Female	75	44.64	109	50.93	114	51.58	112	48.91
By type of employment								
Permanent employees	165	98.21	210	98.13	217	98.19	228	99.56
Contract employees	3	1.79	4	1.87	4	1.81	1	0.44
By position level								
Executive	**13**	**7.74**	**18**	**8.42**	**19**	**8.60**	**20**	**8.73**
- Male	5	2.98	9	4.21	9	4.07	10	50.00
- Female	8	4.76	9	4.21	10	4.53	10	50.00
Supervisory	**24**	**14.29**	**27**	**12.62**	**31**	**14.03**	**33**	**14.41**
- Male	N/A	N/A	N/A	N/A	N/A	N/A	13	39.39
- Female	N/A	N/A	N/A	N/A	N/A	N/A	20	60.61
Operational	**131**	**77.98**	**169**	**78.97**	**171**	**77.38**	**176**	**76.86**
- Male	N/A	N/A	N/A	N/A	N/A	N/A	94	53.41
- Female	N/A	N/A	N/A	N/A	N/A	N/A	82	46.59
By age								
Less than 30 years	28	16.67	33	15.42	35	15.84	36	15.72
Between 30-50 years	122	72.62	158	73.83	163	73.76	173	75.55
More than 50 years	18	10.71	23	10.75	23	10.40	20	8.73
By geographical location								
Central region (Bangkok)	117	69.64	148	69.16	151	68.33	150	65.50
Eastern region (Chachoengsao, Chonburi, and Rayong)	51	30.36	66	30.84	70	31.67	79	34.50

East Water's Outsourced Worker Information

Employees	2016		2017		2018		2019	
	Number (person)	Percent	Number (person)	Percent	Number (person)	Percent	Number (person)	Percent
Total outsourced workers	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**49**	**100**
By gender								
Male	N/A	N/A	N/A	N/A	N/A	N/A	31	63.26
Female	N/A	N/A	N/A	N/A	N/A	N/A	18	36.74
By position level								
Executive	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**-**	**-**
- Male	N/A	N/A	N/A	N/A	N/A	N/A	-	-
- Female	N/A	N/A	N/A	N/A	N/A	N/A	-	-
Supervisory	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**-**	**-**
- Male	N/A	N/A	N/A	N/A	N/A	N/A	-	-
- Female	N/A	N/A	N/A	N/A	N/A	N/A	-	-
Operational	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**49**	**100**
- Male	N/A	N/A	N/A	N/A	N/A	N/A	31	63.26
- Female	N/A	N/A	N/A	N/A	N/A	N/A	18	36.74
By age								
Less than 30 years	N/A	N/A	N/A	N/A	N/A	N/A	20	40.82
Between 30-50 years	N/A	N/A	N/A	N/A	N/A	N/A	28	57.14
More than 50 years	N/A	N/A	N/A	N/A	N/A	N/A	1	2.04
By geographical location								
Central region (Bangkok)	N/A	N/A	N/A	N/A	N/A	N/A	22	44.90
Eastern region (Chachoengsao, Chonburi, and Rayong)	N/A	N/A	N/A	N/A	N/A	N/A	27	55.10

Employment Rate of New Employees by Gender, Age, and Geographical Location (Disclosure 401-1)

Employees	2016		2017		2018		2019	
	Number (person)	Percent	Number (person)	Percent	Number (person)	Percent	Number (person)	Percent
Total employment rate of new employees	**19**	**11.31**	**65**	**30.37**	**23**	**10.41**	**23**	**10.04**
By gender								
Male	9	5.36	19	8.87	11	4.98	17	7.42
Female	10	5.95	46	21.50	12	5.43	6	2.62
By age								
Less than 30 years	8	4.76	18	8.41	13	5.88	10	4.37
Between 30-50 years	10	5.95	45	21.03	10	4.53	13	5.68
More than 50 years	1	0.60	2	0.93	-	-	-	-
By geographical location								
Central region (Bangkok)	6	3.57	7	3.27	12	5.43	13	5.68
Eastern region (Chachoengsao, Chonburi, and Rayong)	13	7.74	58	27.10	11	4.98	10	4.37

Attrition Rate of Employees by Gender, Age, and Geographical Location

Employees	2016		2017		2018		2019	
	Number (person)	Percent	Number (person)	Percent	Number (person)	Percent	Number (person)	Percent
Total attrition rate of employees	**20**	**11.9**	**19**	**8.89**	**15**	**6.79**	**15**	**6.55**
By gender								
Male	10	5.95	7	3.28	9	4.07	7	3.06
Female	10	5.95	12	5.61	6	2.72	8	3.49
By age								
Less than 30 years	6	3.57	5	2.34	6	2.72	2	0.87
Between 30-50 years	14	8.33	11	5.14	9	4.07	10	4.37
More than 50 years	-	-	3	1.41	-	-	3	1.31
By geographical location								
Central region (Bangkok)	17	10.12	15	7.02	10	4.53	13	5.68
Eastern region (Chachoengsao, Chonburi, and Rayong)	3	1.78	4	1.87	5	2.26	2	0.87

Statistics of Leave Records of Employees by Gender and Geographical Location of 2019 (Disclosure 403-2)

No. of Persons	No. of Working Days	No. of Leave Days		Sick Leave (AR)	No. of Work-Related Diseases	*Sick Leave (ODR)
		From General Sickness	From Accidents			
By gender						
Male	28,431.00	524.25	26.00	0.02	-	-
Female	27,216.00	605.75	-	0.02	-	-
Head Office						
Male	13,365.00	272.31	-	0.02	-	-
Female	23,085.00	551.81	-	0.02	-	-
Operating Sites						
Male	15,066.00	251.94	26.00	0.02	-	-
Female	4,131.00	53.94	-	0.01	-	-

In 2019, there were a total of 244 working days, calculated based on the actual work days of each year.

Affiliated Companies' Employee Information

Employees	Tap Water Business		Wastewater Treatment and Recycled Water Business	
	2019			
	Number (person)	Percent	Number (person)	Percent
Total employees	**141**	**100**	**-**	**-**
By gender				
Male	97	68.79	-	-
Female	44	31.21	-	-
By type of employment				
Permanent employees	133	94.33	-	-
Contract employees	8	5.67	-	-
By position level				
Executive	**9**	**6.38**	**-**	**-**
- Male	6	66.67	-	-
- Female	3	33.33	-	-
Supervisory	**18**	**12.77**	**-**	**-**
- Male	12	66.67	-	-
- Female	6	33.33	-	-
Operational	**114**	**80.85**	**-**	**-**
- Male	79	69.30	-	-
- Female	35	30.70	-	-
By age				
Less than 30 years	28	19.86	-	-
Between 30-50 years	102	72.34	-	-
More than 50 years	11	7.80	-	-
By geographical location				
Central region (Bangkok, Nakhon Sawan, Ayutthaya, and Phitsanulok)	61	43.26	-	-
Western region (Ratchaburi)	7	4.96	-	-
Eastern region (Chachoengsao, Chonburi, and Rayong)	64	45.39	-	-
Southern region (Surat Thani)	9	6.39	-	-

Affiliated Companies' Employment Rate of New Employees by Gender, Age, and Geographical Location

Employees	Tap Water Business		Wastewater Treatment and Recycled Water Business	
	2019			
	Number (person)	Percent	Number (person)	Percent
Total employment rate of new employees	**17**	**12.06**	**-**	**-**
By gender				
Male	12	8.51	-	-
Female	5	3.55	-	-
By age				
Less than 30 years	9	6.39	-	-
Between 30-50 years	8	5.67	-	-
More than 50 years	-	-	-	-
By geographical location				
Central region (Bangkok, Nakhon Sawan, Ayutthaya, and Phitsanulok)	6	4.26	-	-
Western region (Ratchaburi)	3	2.12	-	-
Eastern region (Chachoengsao, Chonburi, and Rayong)	6	4.26	-	-
Southern region (Surat Thani)	2	1.42	-	-

Affiliated Companies' Attrition Rate of Employees by Gender, Age, and Geographical Location

Employees	Tap Water Business		Wastewater Treatment and Recycled Water Business	
	2019			
	Number (person)	Percent	Number (person)	Percent
Total attrition rate of employees	**12**	**8.51**	**-**	**-**
By gender				
Male	10	7.09	-	-
Female	2	1.42	-	-
By age				
Less than 30 years	3	2.12	-	-
Between 30-50 years	4	2.84	-	-
More than 50 years	5	3.55	-	-
By geographical location				
Central region (Bangkok, Nakhon Sawan, Ayutthaya, and Phitsanulok)	6	4.26	-	-
Western region (Ratchaburi)	-	-	-	-
Eastern region (Chachoengsao, Chonburi, and Rayong)	6	4.26	-	-
Southern region (Surat Thani)	-	-	-	-

Affiliated Companies' Outsourced Worker Information

Employees	Tap Water Business		Wastewater Treatment and Recycled Water Business	
	2019			
	Number (person)	Percent	Number (person)	Percent
Total outsourced workers	**200**	**97.09**	**6**	**2.91**
By gender				
Male	178	86.41	6	2.91
Female	22	10.68	-	-
By position level				
Executive	**-**	**-**	**-**	**-**
- Male	-	-	-	-
- Female	-	-	-	-
Supervisory	**-**	**-**	**-**	**-**
- Male	-	-	-	-
- Female	-	-	-	-
Operational	**200**	**97.09**	**6**	**2.91**
- Male	178	86.41	6	3
- Female	22	10.68	-	-
By age				
Less than 30 years	81	39.32	4	1.94
Between 30-50 years	116	56.31	2	0.97
More than 50 years	3	1.46	-	-
By geographical location				
Central region (Bangkok, Nakhon Sawan, Ayutthaya, and Phitsanulok)	29	14.08	-	-
Western region (Ratchaburi)	23	11.17	-	-
Eastern region (Chachoengsao, Chonburi, and Rayong)	148	71.84	6	2.91
Southern region (Surat Thani)	-	-	-	-

Affiliated Companies' Statistics of Leave Records of Employees by Gender and Geographical Location of 2019

No. of Persons	No. of Working Days	No. of Leave Days		Sick Leave (AR)	No. of Work-Related Diseases	*Sick Leave (ODR)
		From General Sickness	From Accidents			
By gender						
Male	26,001.00	416.23	-	0.02	-	-
Female	11,178.00	177.08	-	0.02	-	-
Head Office						
Male	8,505.00	162.46	-	0.02	-	-
Female	5,103.00	66.02	-	0.01	-	-
Operating Sites						
Male	17,496.00	253.77	-	0.01	-	-
Female	6,075.00	111.06	-	0.02	-	-

In 2019, there were a total of 244 working days, calculated based on the actual work days of each year.

Head Office Energy-Saving Measures
Method for Calculation of Energy-Saving Results

Before Improvement

Chiller Information before Improvement

No.	Machine Description	Size	Unit	Power Input (kW)	Output		%Load (%)	SEC		No. (Item)	Operating Hours (h/y)	Usage (%)	kW (kW)	kWh/y	Remarks
					Data	Unit		No. (Item)	Unit						
1	Chiller No. 1	350.00	TR	126.73	181.08	TR	51.74	0.700	kW/TR	1	931.50	100.00	126.73	118,051.62	350TR Alternate operations between four machines (one machine per day)
2	Chiller No. 2	350.00	TR	130.98	181.08	TR	51.41	0.728	kW/TR	1	931.50	100.00	130.98	122,007.53	350TR Alternate operations between four machines (one machine per day)
3	Chiller No. 3	350.00	TR	134.30	179.26	TR	51.22	0.749	kW/TR	1	931.50	100.00	134.30	125,101.17	350TR Alternate operations between four machines (one machine per day)
4	Chiller No. 4	175.00	TR	68.49	69.07	TR	39.47	0.992	kW/TR	1	2,794.50	100.00	68.49	191,398.62	Ongoing operations
Total														556,558.95	

Remark : kW = (kW/TR) x Size (TR) x %Load x No. (Item)
: kWh/y = kW x Operating Hours x % of Usage

CHP Information before Improvement

No.	Machine Description	Size	Unit	Power Input (kW)	Output		%Load (%)	SEC		No. (Item)	Operating Hours (h/y)	Usage (%)	kW (kW)	kWh/y	Remarks
					Data	Unit		No. (Item)	Unit						
1	CHP-04	15.00	kw	8.17	-	GPM	100.00	-	GPM/ kW	1	931.50	100.00	8.17	7,612.60	Alternate operations between two machines
2	CHP-01	30.00	kw	15.16						1	931.50	100.00	15.16	14,123.50	Alternate operations between two machines
1	CHP-04	15.00	kw	8.25	1,100.04	GPM	100.00	47.26	GPM/ kW	1	931.50	100.00	8.25	7,680.71	Alternate operations between two machines
2	CHP-02	30.00	kw	15.03						1	931.50	100.00	15.03	13,999.67	Alternate operations between two machines
1	CHP-04	15.00	kw	8.22	1,127.67	GPM	100.00	47.92	GPM/ kW	1	931.50	100.00	8.22	7,659.94	Alternate operations between two machines
2	CHP-03	30.00	kw	15.31						1	931.50	100.00	15.31	14,259.69	Alternate operations between two machines
Total														65,336.11	

Remark : kWh/y = kW x Operating Hours x % of Usage

CDP Information before Improvement

No.	Machine Description	Size	Unit	Power Input (kW)	Output		%Load (%)	SEC		No. (Item)	Operating Hours (h/y)	Usage (%)	kW (kW)	kWh/y	Remarks
					Data	Unit		No. (Item)	Unit						
1	CHP-04	11.00	kw	8.47	1,575.00	GPM	100.00	57.75	GPM/kW	1	931.50	100.00	8.47	7,891.16	Alternate operations between two machines
2	CHP-01	18.50	kw	18.80						1	931.50	100.00	18.80	17,512.33	Alternate operations between two machines
1	CHP-04	11.00	kw	8.32	1,575.00	GPM	100.00	58.88	GPM/kW	1	931.50	100.00	8.32	7,752.64	Alternate operations between two machines
2	CHP-02	18.50	kw	18.43						1	931.50	100.00	18.43	17,166.47	Alternate operations between two machines
1	CHP-04	11.00	kw	9.22	1,575.00	GPM	100.00	60.14	GPM/kW	1	931.50	100.00	9.22	8,592.06	Alternate operations between two machines
2	CHP-03	18.50	kw	16.97						1	931.50	100.00	16.97	15,804.21	Alternate operations between two machines
Total														74,718.86	

Remark : kWh/y = kW x Operating Hours x % of Usage

CT Information before Improvement

No.	Machine Description	Size	Unit	Power Input (kW)	Output		%Load (%)	SEC		No. (Item)	Operating Hours (h/y)	Usage (%)	kW (kW)	kWh/y	Remarks
					Data	Unit		No. (Item)	Unit						
1	CT-1/1	5.50	kw	5.52	-	CFM	100.00	-	CFM/kW	1	931.50	100.00	5.52	5,145.61	Alternate operations between two machines
2	CT-1/2	5.50	kw	4.17	-	CFM	100.00	-	CFM/kW	1	931.50	100.00	4.17	3,885.29	Alternate operations between two machines
1	CT-2/1	5.50	kw	5.33	-	CFM	100.00	-	CFM/kW	1	931.50	100.00	5.33	4,963.96	Alternate operations between two machines
2	CT-2/2	5.50	kw	5.33	-	CFM	100.00	-	CFM/kW	1	931.50	100.00	5.33	4,963.96	Alternate operations between two machines
1	CT-3/1	5.00	kw	4.49	-	CFM	100.00	-	CFM/kW	1	931.50	100.00	4.49	4,185.23	Alternate operations between two machines
2	CT-3/2	5.50	kw	4.95	-	CFM	100.00	-	CFM/kW	1	931.50	100.00	4.95	4,607.20	Alternate operations between two machines
3	CT-4	5.50	kw	5.79	-	CFM	100.00	-	CFM/kW	1	2,794.50	100.00	5.79	16,174.57	Alternate operations between two machines
Total														43,925.81	

Remark : kWh/y = kW x Operating Hours x % of Usage

Total Energy before Improvement

No.	Machine Description	Size	Unit	Power Input (kW)	Output		%Load (%)	SEC		No. (Item)	Operating Hours (h/y)	Usage (%)	kW (kW)	kWh/y	Remarks
					Data	Unit		Data	Unit						
1	Chiller	525.00	TR											556,558.95	
2	CHP	45.00	TR											65,336.11	
1	CDP	29.50	kW											74,718.86	
2	CT	16.50	kW											43,925.81	
Total														740,539.73	

Electric power before improvement (E_1) = 740,539.73 kWh/y

Electricity expenses before improvement (S_1) = $E_1 \times C_E$

= 740,539.73 kWh/y x 4.16 baht/kWh

= 3,080,645.28 baht/y

After Improvement

Chiller Information after Improvement

No.	Machine Description	Size	Unit	Power Input (kW)	Output		%Load (%)	SEC		No. (Item)	Operating Hours (h/y)	Usage (%)	kW (kW)	kWh/y	Remarks
					Data	Unit		Data	Unit						
1	Chiller No. 1	350.00	TR	126.73	214.11	TR	61.17	0.627	kW/TR	1	931.50	100.00	134.16	124,971.92	350TR Alternate operations between four machines (one machine per day)
2	Chiller No. 2	350.00	TR	130.98	212.96	TR	60.85	0.652	kW/TR	1	931.50	100.00	138.79	129,287.43	350TR Alternate operations between four machines (one machine per day)
3	Chiller No. 3	350.00	TR	134.30	212.29	TR	60.65	0.671	kW/TR	1	931.50	100.00	142.40	132,642.61	350TR Alternate operations between four machines (one machine per day)
4	Chiller No. 4	175.00	TR	68.49	67.07	TR	39.47	0.992	kW/TR	1	2,794.50	52.17	68.49	99,860.15	Stoppage for 5.50 hours/day
Total														486,762.11	

Remark : kW = (kW/TR) x Size (TR) x %Load x No. (Item)

: kWh/y = kW x Operating Hours x % of Usage

CHP Information after Improvement

No.	Machine Description	Size	Unit	Power Input (kW)	Output		%Load (%)	SEC		No. (Item)	Operating Hours (h/y)	Usage (%)	kW (kW)	kWh/y	Remarks
					Data	Unit		Data	Unit						
1	CHP-04	15.00	kW	8.47	-	GPM	100.00	-	GPM/kW	1	931.50	52.17	8.17	3,971.79	Stoppage for 5.50 hours/day
2	CHP-01	30.00	kW	18.80						1	931.50	100.00	15.16	14,123.50	Alternate operations between two machines
1	CHP-04	15.00	kW	8.32	1,100.04	GPM	100.00	47.26	GPM/kW	1	931.50	52.17	8.25	4,007.33	Stoppage for 5.50 hours/day
2	CHP-02	30.00	kW	18.43						1	931.50	100.00	15.03	13,999.67	Alternate operations between two machines
1	CHP-04	15.00	kW	9.22	1,127.67	GPM	100.00	47.92	GPM/kW	1	931.50	52.17	8.22	3,996.49	Stoppage for 5.50 hours/day
2	CHP-03	30.00	kW	16.97						1	931.50	100.00	15.31	14,259.69	Alternate operations between two machines
Total														54,358.47	

Remark : kWh/y = kW x Operating Hours x % of Usage

CDP Information before Improvement

No.	Machine Description	Size	Unit	Power Input (kW)	Output		%Load (%)	SEC		No. (Item)	Operating Hours (h/y)	Usage (%)	kW (kW)	kWh/y	Remarks
					Data	Unit		Data	Unit						
1	CDP-04	11.00	kW	8.47	1,575.00	GPM	100.00	57.75	GPM/kW	1	931.50	52.17	8.47	4,117.13	Stoppage for 5.50 hours/day
2	CDP-01	18.50	kW	18.80						1	931.50	100.00	18.80	17,512.33	Alternate operations between two machines
1	CDP-04	11.00	kW	8.32	1,575.00	GPM	100.00	58.88	GPM/kW	1	931.50	52.17	8.32	4,044.86	Stoppage for 5.50 hours/day
2	CDP-02	18.50	kW	18.43						1	931.50	100.00	18.43	17,166.47	Alternate operations between two machines
1	CDP-04	11.00	kW	9.22	1,575.00	GPM	100.00	60.14	GPM/kW	1	931.50	52.17	9.22	4,482.82	Stoppage for 5.50 hours/day
2	CDP-03	18.50	kW	16.97						1	931.50	100.00	16.97	15,804.21	Alternate operations between two machines
Total														63,127.80	

Remark : kWh/y = kW x Operating Hours x % of Usage

CT Information after Improvement

No.	Machine Description	Size	Unit	Power Input (kW)	Output		%Load (%)	SEC		No. (Item)	Operating Hours (h/y)	Usage (%)	kW (kW)	kWh/y	Remarks
					Data	Unit		Data	Unit						
1	CT-1/1	5.50	kW	5.52	-	CFM	100.00	-	CFM/kW	1	931.50	100.00	5.52	5,145.61	Alternate operations between two machines
2	CT-1/2	5.50	kW	4.17	-	CFM	100.00	-	CFM/kW	1	931.50	100.00	4.17	3,885.29	Alternate operations between two machines
1	CT-2/1	5.50	kW	5.33	-	CFM	100.00	-	CFM/kW	1	931.50	100.00	5.33	4,963.96	Alternate operations between two machines
2	CT-2/2	5.50	kW	5.33	-	CFM	100.00	-	CFM/kW	1	931.50	100.00	5.33	4,963.96	Alternate operations between two machines
1	CT-3/1	5.50	kW	4.49	-	CFM	100.00	-	CFM/kW	1	931.50	100.00	4.49	4,185.23	Alternate operations between two machines
2	CT-3/2	5.50	kW	4.95	-	CFM	100.00	-	CFM/kW	1	931.50	100.00	4.95	4,607.20	Alternate operations between two machines
3	CT-4	5.50	kW	5.79	-	CFM	100.00	-	CFM/kW	1	2,794.50	52.17	5.79	8,438.90	Stoppage for 5.50 hours/day
Total														36,190.15	

Remark : kWh/y = kW x Operating Hours x % of Usage

Total Energy after Improvement

No.	Machine Description	Size	Unit	Power Input (kW)	Output		%Load (%)	SEC		No. (Item)	Operating Hours (h/y)	Usage (%)	kW (kW)	kWh/y	Remarks
					Data	Unit		Data	Unit						
1	Chiller	525.00	TR											486,762.11	
2	CHP	45.00	kW											54,358.47	
1	CDP	29.50	kW											63,127.80	
2	CT	16.50	kW											36,190.15	
Total														640,438.53	

Electric power after improvement (E_1) = 640,438.53 kWh/y

Electricity expenses after improvement (S_1) = $E_1 \times C_E$

= 640,438.53 kWh/y x 4.16 baht/kWh

= 2,664,224.27 baht/y

Energy Saving Results

Electric power saving per year (E_S) = E_1 - E_2
= 740,539.73 kWh/y - 640,438.53 kWh/y
= 100,101.20 kWh/y

Electricity expense saving per year (S_E) = E_S x C_E
= 100,101.20 kWh/y x 4.16 baht/kWh
= 416,658.08 baht/y

Comparable to diesel = 100,101.20 x 85.21/1,000,000
= 8.53 TOE/y

Investment

Payback period (P_B) = C / S_E
= 1,800,000.00 baht / 416,658.08 baht/y
= 4.32 y

GRI Content Index

GRI Standard	Disclosure	Page Number		Scope of Report	Omission Note	External Assurance
		AR	SR			
GRI 101: Foundation 2016						
General Disclosures						
GRI Disclosure 2016	ORGANIZATIONAL PROFILE					
	102-1 Name of the organization		8			
	102-2 Activities, brands, products, and services		8			
	102-3 Location of headquarters		8			
	102-4 Location of operations		8			
	102-5 Ownership and legal form		9, 11			
	102-6 Markets served		10, 37			
	102-7 Scale of the organization		13, 14, 95			
	102-8 Information on employees and other workers		95			
	102-9 Supply chain		12, 25			
	102-10 Significant changes to the organization and its supply chain		12, 17			
	102-11 Precautionary principle or approach	78	16			
	102-12 External initiatives		26			
	102-13 Membership of associations		27			
	STRATEGY					
	102-14 Statement from senior decision-maker		7			
	102-15 Key impacts, risks, and opportunities	48	16			
	ETHICS AND INTEGRITY					
	102-16 Values, principles, standards, and norms of behavior		3			
	102-17 Mechanisms for advice and concerns about ethics		16			
	GOVERNANCE					
	102-18 Governance structure		14			
	102-19 Delegating authority		24			
	102-20 Executive-level responsibility for economic, environmental, and social topics		14, 24			
	102-22 Composition of the highest governance body and its committees		14			

GRI Standard		Disclosure	Page Number		Scope of Report	Omission Note	External Assurance
			AR	SR			
GRI Disclosure 2016	102-23	Chair of the highest governance body		14			
	102-24	Nominating and selecting the highest governance body		14			
	102-26	Role of highest governance body in sitting purpose, values, and strategy		24			
	102-32	Highest governance body's role in sustainability reporting		16, 20			
	102-33	Communication critical concerns		20			
	STAKEHOLDER ENGAGEMENT						
	102-40	List of stakeholder groups		18			
	102-41	Collective bargaining agreements		59			
	102-42	Identifying and selecting stakeholders		18			
	102-43	Approach to stakeholder engagement		18, 37	Total water solutions customers of the business group		
	102-44	Key topics and concerns raised		18, 37			
	REPORTING PRACTICE						
	102-45	Entities included in the consolidated financial statements		17			
	102-46	Defining report content and topic boundaries		17			
	102-47	List of material topics		20			
	102-48	Restatements of information		17			
	102-49	Changes in reporting		17			
	102-50	Reporting period		17			
	102-51	Date of most recent report		17			
	102-52	Reporting cycle		17			
	102-53	Contact point for questions regarding the report		17			
	102-54	Claims of reporting in accordance with the gri standards		17			
	102-55	GRI content index		110			
	102-56	External assurance		17			

GRI Standard	Disclosure		Page Number		Scope of Report	Omission Note	External Assurance
			AR	SR			
Material Topics							
GRI 200 Economic Standard Series							
GRI 103 Management Approach 2016	ECONOMIC PERFORMANCE						
	103-1	Explanation of the material topic and its boundary		33-43			
	103-2	The management approach and its components					
	103-3	Evaluation of the management approach					
GRI 201 Economic Performance 2016	201-1	Direct economic value generated and distributed		13, 33	Income and operating expenses of the business group		
	201-2	Financial implications and other risks and opportunities due to climate change		33	The operations of the total water solutions of the business group		
GRI 103 Management Approach 2016	INDIRECT ECONOMIC IMPACTS						
	103-1	Explanation of the material topic and its boundary		80-89			
	103-2	The management approach and its components					
	103-3	Evaluation of the management approach					
GRI 203 Indirect Economic Impacts 2016	203-1	Infrastructure investments and services supported		80, 84	Social, community and environmental contribution activities related to the Company's business operations		
GRI 103 Management Approach 2016	ANTI-CORRUPTION						
	103-1	Explanation of the material topic and its boundary		29-31			
	103-2	The management approach and its components					
	103-3	Evaluation of the management approach					

GRI Standard		Disclosure	Page Number		Scope of Report	Omission Note	External Assurance
			AR	SR			
GRI 205 Anti-Corruption 2016	205-2	Communication and training about anti-corruption policies and procedures	64	29	Full-time employees and contract workers of the business group, because they are the people who implement the policy into practice. And trading partners of the business group, because it is an important issue that more than one stakeholder group is interested in.		
Material Topics							
GRI 300 Environmental Standard Series							
GRI 103 Management Approach 2016	ENERGY						
	103-1	Explanation of the material topic and its boundary		52-55			
	103-2	The management approach and its components					
	103-3	Evaluation of the management approach					
GRI 302 Energy 2016	302-3	Energy intensity		52	The operating areas cover Rayong, Chonburi and Chachoengsao provinces. Because the main process of the company covers such areas including the use of electric power in the headquarters section. (East Water building)	By requesting an exemption from checking information of the affiliates, since it was the first year of reporting.	●
	302-4	Reduction of energy consumption		52			
GRI 103 Management Approach 2016	WATER						
	103-1	Explanation of the material topic and its boundary		45-50			
	103-2	The management approach and its components					
	103-3	Evaluation of the management approach					

GRI Standard		Disclosure	Page Number		Scope of Report	Omission Note	External Assurance
			AR	SR			
GRI 303 Water 2018	303-1	Interactions with water as a shared resource		45, 92	The report covers only the business group's operating sites.		
	303-2	Management of water discharge-related impacts		47, 92			
	303-3	Water withdrawal		45, 56, 92, 94			●
	303-5	Water consumption		46, 92			
GRI 103 Management Approach 2016	EMISSIONS						
	103-1	Explanation of the material topic and its boundary		53-55			
	103-2	The management approach and its components					
	103-3	Evaluation of the management approach					
GRI 305 Emissions 2016	305-2	Energy indirect (scope 2) GHG emissions		55	Operating sites , including the electricity use for the headquarters of the business group (East Water building)		
GRI 103 Management Approach 2016	EFFLUENTS AND WASTE						
	103-1	Explanation of the material topic and its boundary		35, 41-42, 50			
	103-2	The management approach and its components					
	103-3	Evaluation of the management approach					
GRI 306 Effluents And Waste 2016	306-1	Water discharge by quality and destination		35, 50, 94			
Material Topics							
GRI 400 Social Standard Series							
GRI 103 Management Approach 2016	EMPLOYMENT						
	103-1	Explanation of the material topic and its boundary		68-69			
	103-2	The management approach and its components					
	103-3	Evaluation of the management approach					
GRI 401 Employment 2016	401-1	New employee hires and employee turnover		97	Employees of the business group		
	401-2	Benefits provided to full-time employees that are not provided to temporary or part-time employees		68			

GRI Standard		Disclosure	Page Number		Scope of Report	Omission Note	External Assurance
			AR	SR			
	OCCUPATIONAL HEALTH AND SAFETY						
GRI 103 Management Approach 2016	103-1	Explanation of the material topic and its boundary		72-78			
	103-2	The management approach and its components					
	103-3	Evaluation of the management approach					
GRI 403 Occupational-Health-And-Safety 2018	403-1	Occupational health and safety management system		72, 77			
	403-5	Worker training on occupational health and safety		72			
	403-9	Work-related injuries		72	Full-time employees, contract workers and subcontractors– projects with procurement agreements only.	By requesting an exemption on absentee rate data sets of all the subcontractors. Because they are not the key points of the business operations.	●
	TRAINING AND EDUCATION						
GRI 103 Management Approach 2016	103-1	Explanation of the material topic and its boundary		62-67			
	103-2	The management approach and its components					
	103-3	Evaluation of the management approach					
GRI 404 Training And Education 2016	404-1	Average hours of training per year per employee		67	Employees of the business group, because they are the major driving forces for the operations.		
	404-2	Programs for upgrading employee skills and transition assistance programs		62			
	LOCAL COMMUNITIES						
GRI 103 Management Approach 2016	103-1	Explanation of the material topic and its boundary		79-80			
	103-2	The management approach and its components					
	103-3	Evaluation of the management approach					
GRI 413 Local Communities 2016	413-2	Operations with significant actual and potential negative impacts on local communities		79	The operations of the Company's construction projects.		

LR Independent Assurance Statement

Relating to Eastern Water Resources Development and Management Public Company Limited's Sustainability Report for the calendar year 2019

This Assurance Statement has been prepared for *Eastern Water Resources Development and Management Public Company Limited* in accordance with our contract but is intended for the readers of this Report.

Terms of engagement

Lloyd's Register Quality Assurance Limited (LR) was commissioned by *Eastern Water Resources Development and Management Public Company Limited* (*EASTW*) to provide independent assurance on its 'Sustainability Report 2019' ("the report") against the *assurance criteria below* to a "*limited level of assurance and materiality of the professional judgement of the verifier"* using "*LR's verification procedure".*

Our assurance engagement covered *EASTW's* operations and activities in water pumping and pipeline system in the Eastern region of Thailand, excluded its subsidiary companies, and specifically the following requirements:

- GRI Standards[1] and core option
- Evaluating the accuracy and reliability of data and information for only the selected indicators listed below: [2]
- Environmental : GRI 302-3 Energy Intensity, GRI 303-3 (version 2018) Water Withdrawal
- Social : GRI 403-9 (version 2018) Work-related Injuries

Our assurance engagement excluded the data and information of *EASTW's* suppliers, contractors and any third-parties mentioned in the report.
LR's responsibility is only to *EASTW*. LR disclaims any liability or responsibility to others as explained in the end footnote. *EASTW's* responsibility is for collecting, aggregating, analysing and presenting all the data and information within the report and for maintaining effective internal controls over the systems from which the report is derived. Ultimately, the report has been approved by, and remains the responsibility of *EASTW*.

LR's Opinion

Based on LR's approach nothing has come to our attention that would cause us to believe that *EASTW* has not, in all material respects:

- Met the requirements above
- Disclosed accurate and reliable performance data and information as no errors or omissions were detected
- Covered all the issues that are important to the stakeholders and readers of this report.

The opinion expressed is formed on the basis of a limited level of assurance and at the materiality of the professional judgement of the verifier.
Note: The extent of evidence-gathering for a limited assurance engagement is less than for a reasonable assurance engagement. Limited assurance engagements focus on aggregated data rather than physically checking source data at sites. Consequently, the level of assurance obtained in a limited assurance engagement is substantially lower than the assurance that would have been obtained had a reasonable assurance engagement been performed.

LR's approach

LR's assurance engagements are carried out in accordance with our verification procedure. The following tasks though were undertaken as part of the evidence gathering process for this assurance engagement:

- Assessing *EASTW's* approach to stakeholder engagement to confirm that issues raised by stakeholders were captured correctly. We did this through reviewing documents and associated records.

[1] *https://www.globalreporting.org*

[2] *GHG quantification is subject to inherent uncertainty.*

- Reviewing *EASTW's* process for identifying and determining material issues to confirm that the right issues were included in their Report. We did this by benchmarking reports written by *EASTW* and its peers to ensure that sector specific issues were included for comparability. We also tested the filters used in determining material issues to evaluate whether *EASTW* makes informed business decisions that may create opportunities that contribute towards sustainable development.
- Auditing *EASTW's* data management systems to confirm that there were no significant errors, omissions or mis-statements in the report. We did this by reviewing the effectiveness of data handling procedures, instructions and systems, including those for internal verification. We also spoke with those key people responsible for compiling the data and drafting the report.

Observations

Further observations and findings, made during the assurance engagement, are:

- Stakeholder inclusivity:
  We are not aware of any key stakeholder groups that have been excluded from *EASTW's* stakeholder engagement process. *EASTW* has open dialogue with all of its stakeholders though the frequency with trade unions would benefit from more regular time intervals.
- Materiality:
  We are not aware of any material issues concerning *EASTW's* sustainability performance that have been excluded from the report. It should be noted that EASTW has established extensive criteria for determining which issue/aspect is material and that these criteria are not biased to the company's management.
- Responsiveness:
  EASTW has not provided a detailed respond to its consumer stakeholders on how they will influence suppliers' performance. We believe that future reports should explain how suppliers will relate to *EASTW's* sustainability strategies.
- Reliability:
  Data management systems are considered to be well defined but the implementation of the systems is variable at site level. This is because of lack of direction on how to apply conversion factors. *EASTW* could either direct all of its sites an agreed conversion tool or introduce a function in the data collection tool that automatically converts the data into the required unit.

LR's standards, competence and independence

LR ensures the selection of appropriately qualified individuals based on their qualifications, training and experience. The outcome of all verification and certification assessments is then internally reviewed by senior management to ensure that the approach applied is rigorous and transparent.

Ms.Wiriya Rattanasuwan Dated: 29th March 2020

LR Lead Verifier

On behalf of Lloyd's Register Quality Assurance Limited. Represented by Lloyd's Register International (Thailand) Limited.,22nd Floor, Sirinrat Building, 3388/78 Rama IV Road, Klongton, Klongtoey, Bangkok 10110 THAILAND.

LR reference: BGK00000457


eastwater

eastwater

Eastern Water Resources Development and Management PCL.

East Water Building
1 Vipavadeerangsit 5, Vipavadeerangsit Road, Jomphol, Jatujak, Bangkok 10900 (Thailand)
Tel : (66) 2272 1600 Fax : (66) 2272 1602

eastwater
www.eastwater.com