





# Delivering “Quality of Water and Quality of Life” for a Sustainable Future

More than 17 years, we are doing business with dedication and care to customers.

The goal is to produce

**Quality, Sufficiency  
and Continuity**

tap water in order to serve the customers’ needs and tap water’s users with attention to detail and every production process, starting from source to consumers. In addition, TTW realizes the importance of sustainability for all stakeholders and all humanity to peaceful coexistence.



TTW



# Vision Mission Corporate Values



## Vision

To be Thailand's Leading Company in Water, Energy and Eco-Friendly Businesses.



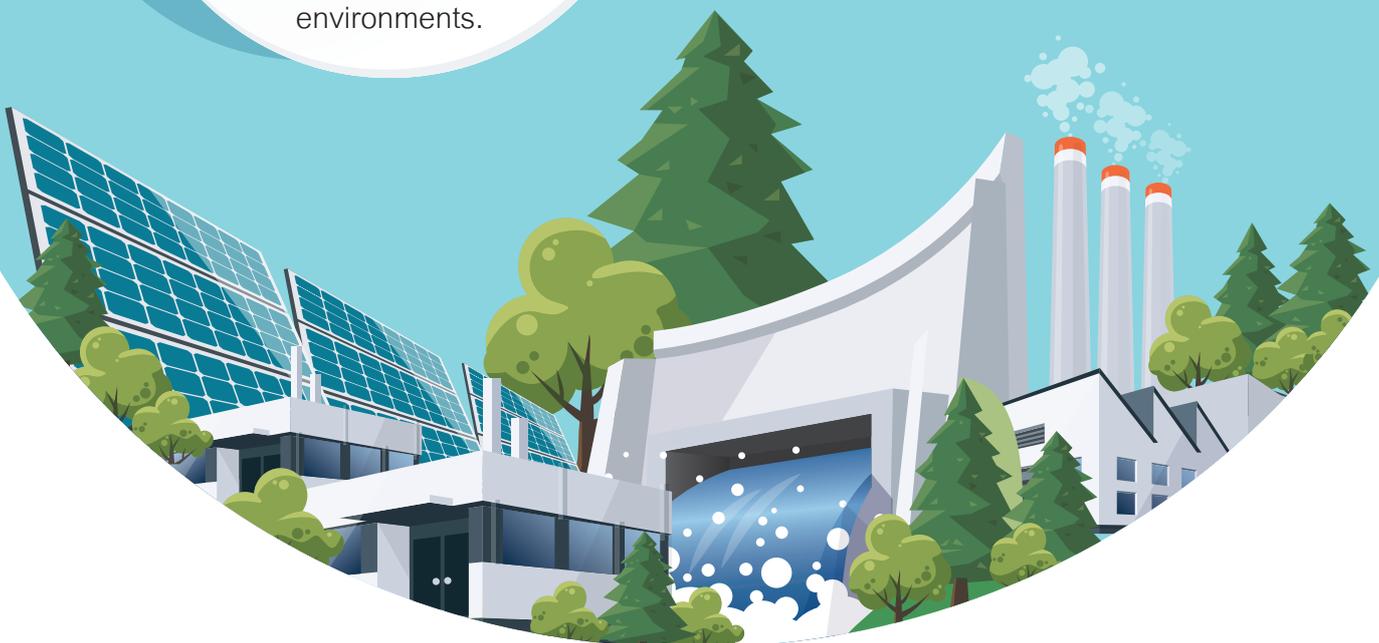
## Mission

To grow on a firm, continuous and sustainable basis in order to accomplish our vision through the balance of interests among customers, employees, business partners, shareholders, communities and environments.

## Corporate Values

Running business to fulfill our vision and mission on the basis of sharing highest satisfaction and benefits among stakeholders by means of:

- Continuous Improvement
- Proactive & Initiative
- Teamwork





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## Message from the Managing Director



“ The Company adhered to operate tap water business with quality together with enhancing the quality of life of the people in society, conserve natural resources and environmental stewardship. ”

Ms. Walainut Trivisvavet  
Managing Director

The year 2020 has been a challenging year for “TTW” business operation resulting from the epidemic COVID-19 situation, affecting to the Thailand and the World economy in fluctuations from the situation arising. The business sector has to change corporate leader’s mindset in order to adapt to survive in a changing world.

From the challenge that arises, the Company is constantly developing organization in order to become “Thailand’s Leading Company in Water, Energy and Eco-Friendly Businesses” by growing steadily, continuously and sustainably in order to achieve a vision based on balance and the best interests of all stakeholders. In the past, the Company has operated the business with responsibility and taking into account the environment, society under the principles of corporate governance or ESG (Environmental, Social and Governance). The Company responds to the Sustainable Development Goals (SDGs) by promoting water for use and providing water management and sanitation for all, including other SDGs for a sustainable business operation.

From the epidemic of COVID-19 situation, the Company has been affected by the situation, but the business operation continues to operate as normally without affecting the stakeholders. The Company has strong measures to prevent the epidemic of COVID-19 within the organization including financial support, allocating essential resources and COVID-19 anti-epidemic equipment to stakeholders as well as government agencies and hospital affected by the situation in order to effectively prevent and control the epidemic of COVID-19 and help society in this crisis.

The Company adhered to operate tap water business with quality together with enhancing the quality of life of the people in society, conserve natural resources and environmental stewardship. Therefore, the Company regards to energy conservation, reduce an amount of GHG emission, water conservation and using resource wisely, by prescribe a target to reduce electricity consumption and the amount of GHG emission per product unit at least 0.05% per year, water recovery in new production processes, promote to using sludge from the production decorate the school building for Wat Rat Thammaram School, Samut Sakhon and Wat Sukkha Wattanaram School, Nakhon Pathom, including sludge mixed with food waste to make compost within the Company’s head office and extending to the Thai Rath Wittaya 4 School, Nakhon Pathom, a school with a shortage in the service area, to enhance the worthwhile use of resources for the community to have the resources to be use as long as possible in accordance with the Circular Economy principle.

On behalf of TTW Public Company Limited, we would like to thank stakeholders for taking part in the development and support of the Company’s sustainable growth path, while enhancing and improving the quality of life of the people in society, conserving natural resources, and environmental stewardship sustainably.



# About this Report

The Company has published the Sustainability Report for the ninth consecutive year, commencing in 2012, which has been separated from the Annual Report, based on the 2014 Global Reporting Initiative (GRI-G3) international standards, revised the report according to the GRI-G3.1 version 2016 - 2017 and developed the report according to the GRI-G4. In 2018, the report was made according to the GRI Standard at the Core Option level for the first year, for the 2020 the report was made according to the same standard.



## Report Content

The content of this report covers of 16 the main point and other sustainability issues, which consist of 15 no significant differences issues and 1 of significant differences issues. From the epidemic COVID-19 situation, compared with the previous report are as follows:

1. Good Corporate Governance
2. Risk Management and Business Continuity
3. Crisis Management from the COVID-19 Situation
4. Supply Chain Management
5. Products and Services Responsibility
6. Innovation and Technology
7. Employee Stewardship and Development
8. Occupational Health and Safety
9. Social and Community Development
10. Environmentally Friendly Process of Products and Services
11. Water Management
12. Waste and Unused Materials Management
13. Climate Change and Water Conservation
14. Biodiversity
15. Environment Cooperation between Organization
16. Environmental Compliance

In addition, the Company adhere to prescribe the goals and show the performance in support of the United Nations Sustainable Development Goals (SDGs) in this report.



## Reporting Boundary

This report covers operations from January 1, 2020 - December 31, 2020 to report the organization's sustainability performance in three dimensions which are economy, society and environment, then aforementioned performance is linked with United Nations Sustainable Development Goals (SDGs) which covers the operations of the production and distribution of tap water in all five areas including Nakhon Pathom - Samut Sakhon area, Pathum Thani-Rangsit area, Bang Pa-in Industrial Estate area in Ayutthaya, Amata City Industrial Estate area in Chonburi and Amata City Industrial Estate area in Rayong.



## Report Endorsement

This report was assessed according to the ISAR (International Standards of Accounting and Reporting), GCI criteria (Guidance on Core Indicators) from Thaipat Institute, as well as the Company's Sustainability Development Committee certified the report on March 3, 2021.



## Contact Information

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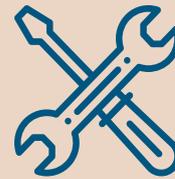
# About TTW

The Company operates the utility business throughout the supply chain by operating the tap water production business, maintenance of the tap water production business, wastewater treatment business, as well as other businesses to become “To be Thailand’s Leading Company in Water, Energy and Eco-Friendly Businesses” according to the organization’s vision. The Company regards to technology management, standardization in manufacturing, high quality, verifiable throughout the supply chain, addressing environment and community, including develop business partners growing together sustainably.



## Tap Water Production Business

Operated by TTW Public Company Limited (TTW) and Pathum Thani Water Company Limited (PTW)



## Maintenance of the Tap Water Production Business

Maintenance of tap water system to be efficient and ready to use, operated by Thai Water Operations Company Limited (TWO)

### TTW

production capacity is

**540,000**  
(cubic meters / day)

### PTW

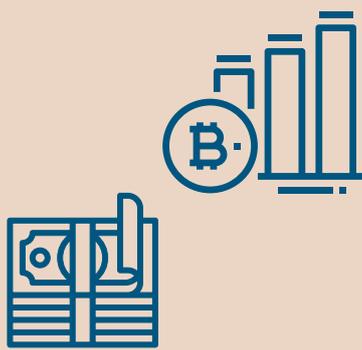
production capacity is

**488,000**  
(cubic meters / day)

### TWO

shareholding of

**68.00**  
(%)



revenues

**3,887.56**  
(million Baht)

shareholding of

**98.00**  
(%)

revenues

**1,969.18**  
(million Baht)

shareholding of

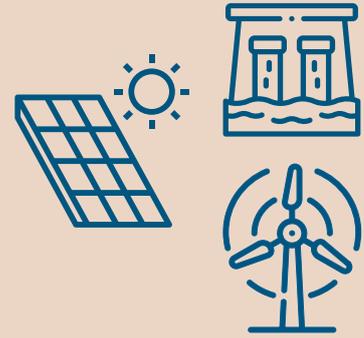
**55.75**  
(million Baht)



## Wastewater Treatment Business

Wastewater treatment and improvement, operated by:

- Thai Water Operations Company Limited (TWO), Amata City Industrial Estate area in Chonburi and Amata City Industrial Estate area in Rayong
- TTW Public Company Limited (TTW), Bang Pa-in Industrial Estate area in Ayutthaya



## Other Businesses

Invested in producing and distributing electricity from other energy business in CK Power Public Company Limited

## TTW

Tap Water production

**48,000**  
(cubic meters / day)

Wastewater treatment

**18,000**  
(cubic meters / day)

Revenue

**242.71**  
(million Baht)

## TWO

Tap Water production

**50,400**  
(cubic meters / day)

Wastewater treatment

**4,500**  
(cubic meters / day)

Revenue

**89.38**  
(million Baht)

## CKP

Shareholding

**24.98**  
(%)

TTW invested in CKP

**5,218.70**  
(million Baht)

TTW received dividend from CKP

**60.92**  
(million Baht)

# Background

## September 11, 2000

Registered under the name Thai Tap Water Supply Company Limited

## In 2006

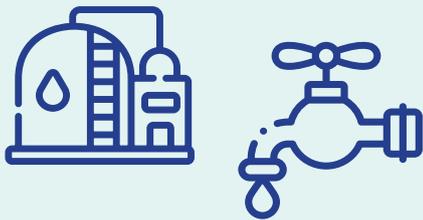
Conversion to Public Company Limited, increase registered capital to 3,990 million Baht

## May 22, 2008

SET classified TTW's common stocks in the category of energy and public utility business

## March 14, 2014

The name changed to TTW Public Company Limited (TTW)

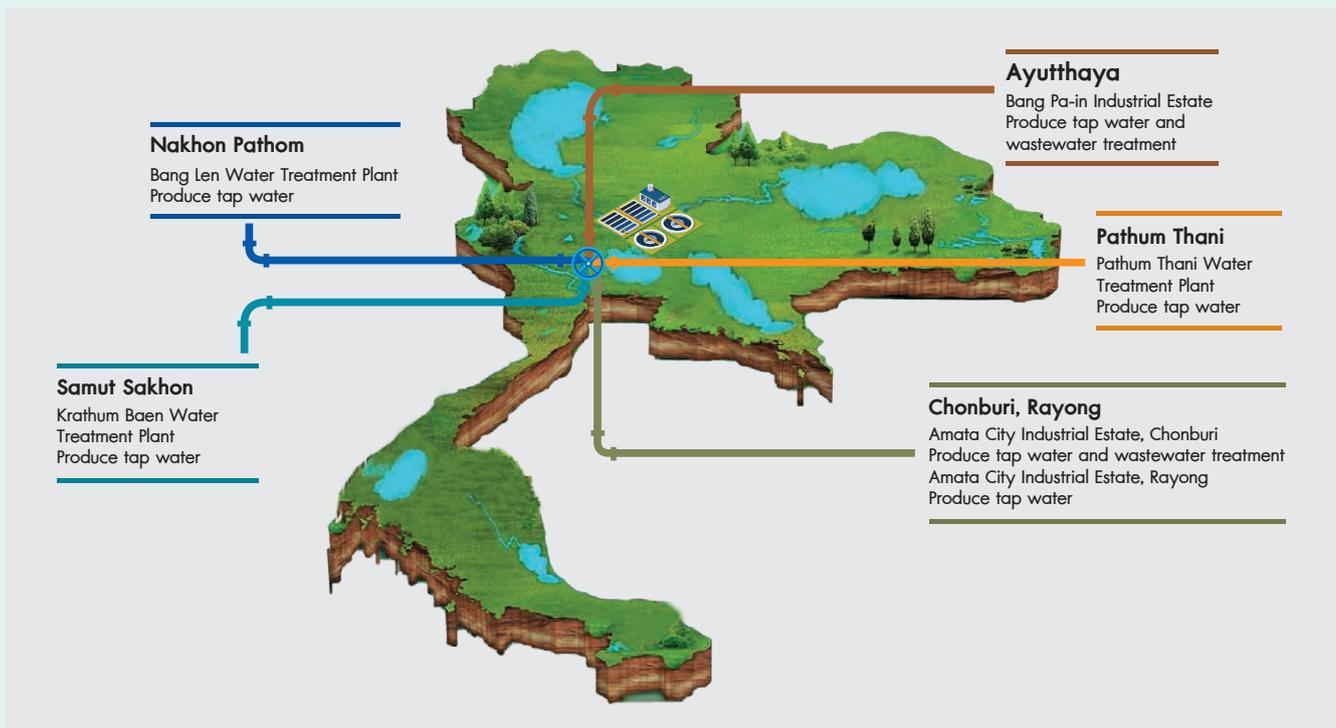


Currently TTW has the maximum tap water capacity for all business areas of

**1,126,400**  
(cubic meters / day)

TTW is the producer and distributor of tap water to the Provincial Waterworks Authority (PWA) in Nakhon Pathom - Samut Sakhon area, acquired the concession to operate the tap water business from the Ministry of Natural Resource and Environment for 25 years, using water from Tha Chin River to produce tap water. The water treatment plant is located in Bang Rakum Sub-District, Banglen District, Nakhon Pathom Province. In this regard, TTW reached a contract with PWA for a period of 30 years, distributing tap water to PWA in Nakhon Chaisri, Samphran, Buddha Monthon District of Nakhon Pathom Province and Krathum Baen, Muang Samut Sakhon District, Samut Sakhon Province from January 5, 2004 onwards. In 2015, TTW constructed the secondary water treatment plant in Khlong Maduea Sub-District, Krathum Baen District, Samut Sakhon Province the construction was completed in June 2017, with a production capacity of 100,000 m<sup>3</sup> / day, able to support future production capacity expansion up to 400,000 m<sup>3</sup> / day. Currently, TTW has the total production capacity of two plants of 540,000 m<sup>3</sup> / day.

In addition, having a contract to produce tap water for PWA in Nakhon Pathom and Samut Sakhon Province, TTW has changed the nature of the business by investing in subsidiaries and associates, as well as the acquisition of rights for tap water and wastewater management in the industrial estates and invest in the company operating to produce and distribute electricity from various types of energy.



## Investment Details



### Pathum Thani Water Company Limited (PTW)

PTW is TTW's subsidiary, which TTW holding 98% of the registered capital of 1,200 million Baht (another 2% were held by PWA). PTW operates the business of production and distribution of water to the PWA in the Pathum Thani - Rangsit area on a Build-Own-Operate-Transfer (BOOT) basis for a period of 25 years commenced in 1998 onwards. Currently, production capacity is 488,000 cubic meters per day, with the minimum off-take quantity to which the PWA has committed amounting to 358,000 cubic meters per day.



### Bang Pa-in Industrial Estate

TTW has acquired the rights to produce tap water and wastewater treatment in Bang Pa-in Industrial Estate (BIE) from Bang Pa-in Land Development Co., Ltd. for 30 years since August 2009, with a production capacity of 48,000 m<sup>3</sup> / day and a wastewater treatment capacity of 18,000 m<sup>3</sup> / day. Currently, TTW has moved the raw water pumping station from Khlong Wua to the Chao Phraya River at Bang Krasan Sub-District, Bang Pa-in District, Ayutthaya Province, which has better raw water quality, thus increasing their confidence in quality and continuity in tap water production.

The implementation of the BIE project increases the organization's revenue and also adds the skills, knowledge and experience of TTW's personnel to become a direct service provider to customers, in order to achieve the vision that "To be Thailand's Leading Company in Water, Energy and Eco-Friendly Businesses"



### Thai Water Operations Company Limited (TWO)

TWO is TTW's subsidiary, which TTW holding 68% and another 32% were held by PTW. TWO provide management and maintenance of the water production and wastewater treatment systems for TTW, PTW, the Bang Pa-in Industrial Estate, Ayutthaya Province and the Amata City Industrial Estate; Chonburi, and the Amata City Industrial Estate; Rayong. TWO got ISO 9001 quality certification from SGS Yearsley for providing maintenance and management of tap water production projects in Pathum Thani, Thammasat and Rangsit areas. In 2018, expanded the ISO 9001 quality certification to the Amata City Industrial Estate; Chonburi, and the Amata City Industrial Estate; Rayong.



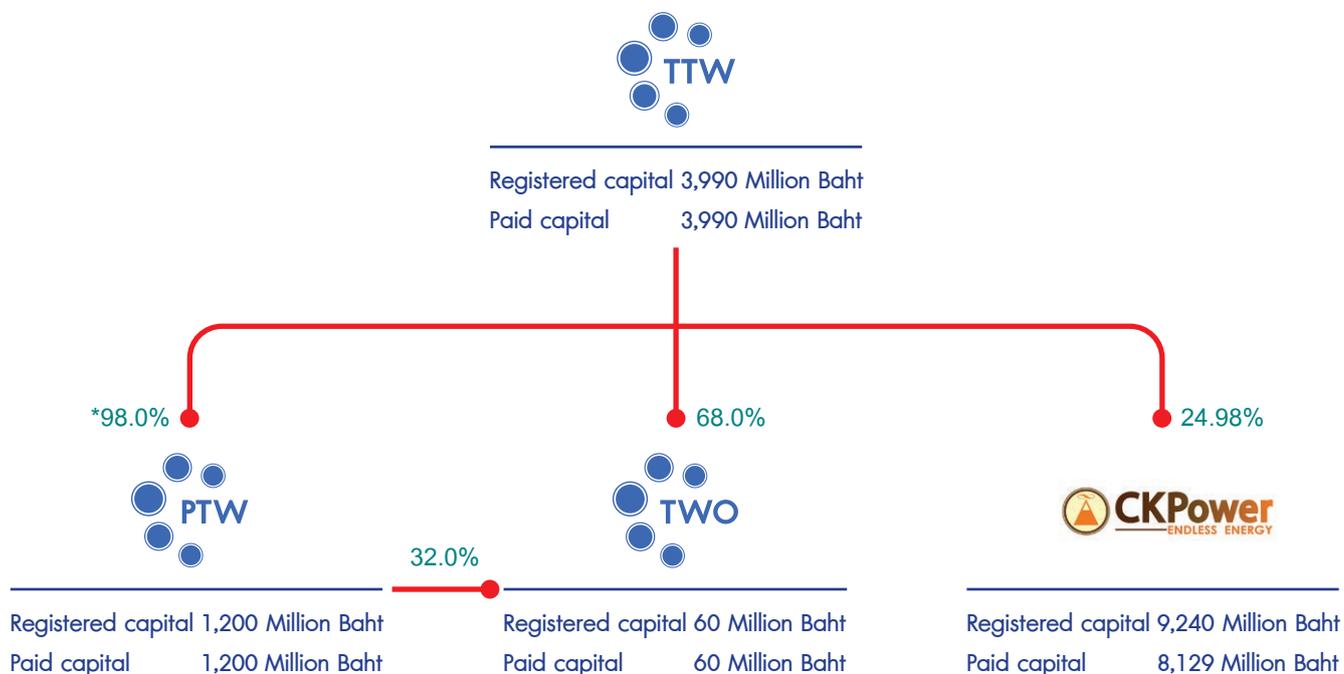
### CK Power Public Company Limited (CKP)

CKP is a listed company in the SET, operates business as holding company in other companies operating the business of production and distribution of electricity. CKP has a registered capital of 9,240 million baht, divide into 9,240 million ordinary shares, at the par value of 1 baht per share, with the paid-up capital of 8,129 million baht.

As at December 31, 2020, TTW holding in CKP at 24.98% of the registered capital. CKP invests in electricity production and distribution business in three types, which are 1) Hydroelectric Power business invested in South East Asia Energy Co., Ltd. and Xayaburi Power Co., Ltd, 2) Cogeneration System business invested in Bang Pa-in Cogeneration Co., Ltd. and 3) Solar Power business invested in Bangkhenchai Co., Ltd. and Nakhon Ratchasima Solar Co., Ltd. and Chiangrai Solar Co., Ltd.

## Shareholding Structure of Company Group

Chart of Shareholding Structure and the Company's Shareholding Percentage as of December 31, 2020



Remark : \*2% is owned by the Provincial Waterworks Authority (PWA)

TTW is listed on the Stock Exchange of Thailand. The Major shareholders are Mitsui Water Holdings (Thailand) Co., Ltd., CH.Karnchang Public Company Limited, Bangkok Expressway and Metro Public Company Limited and both domestic and foreign investors. With shareholding proportion as follows:

No.	Major Shareholder	Number of Share	Share (%)
1	Mitsui Water Holdings (Thailand) Co., Ltd.	1,036,500,000	25.98
2	CH.Karnchang Public Company Limited	774,077,400	19.40
3	Bangkok Expressway and Metro Public Company Limited	736,900,000	18.47
4	Thai NVDR Company Limited	234,211,818	5.87
5	Bangkok Life Assurance Public Company Limited	139,904,800	3.51



# Sustainable Development Policy

1

Adhere to develop business processes

2

Building awareness

3

Promote social and environmental responsibility

4

Promote the organization's sustainable development

5

Encourage employees at all levels and stakeholders participate in CSR activities

6

Promote the development and creation of innovation in business and society

Download Sustainable Development Policy



<https://www.ttwplc.com/en/sd/sustainable-management-and-policy/sustainable-development-policy>



# Sustainable Development Strategy

## Upstream

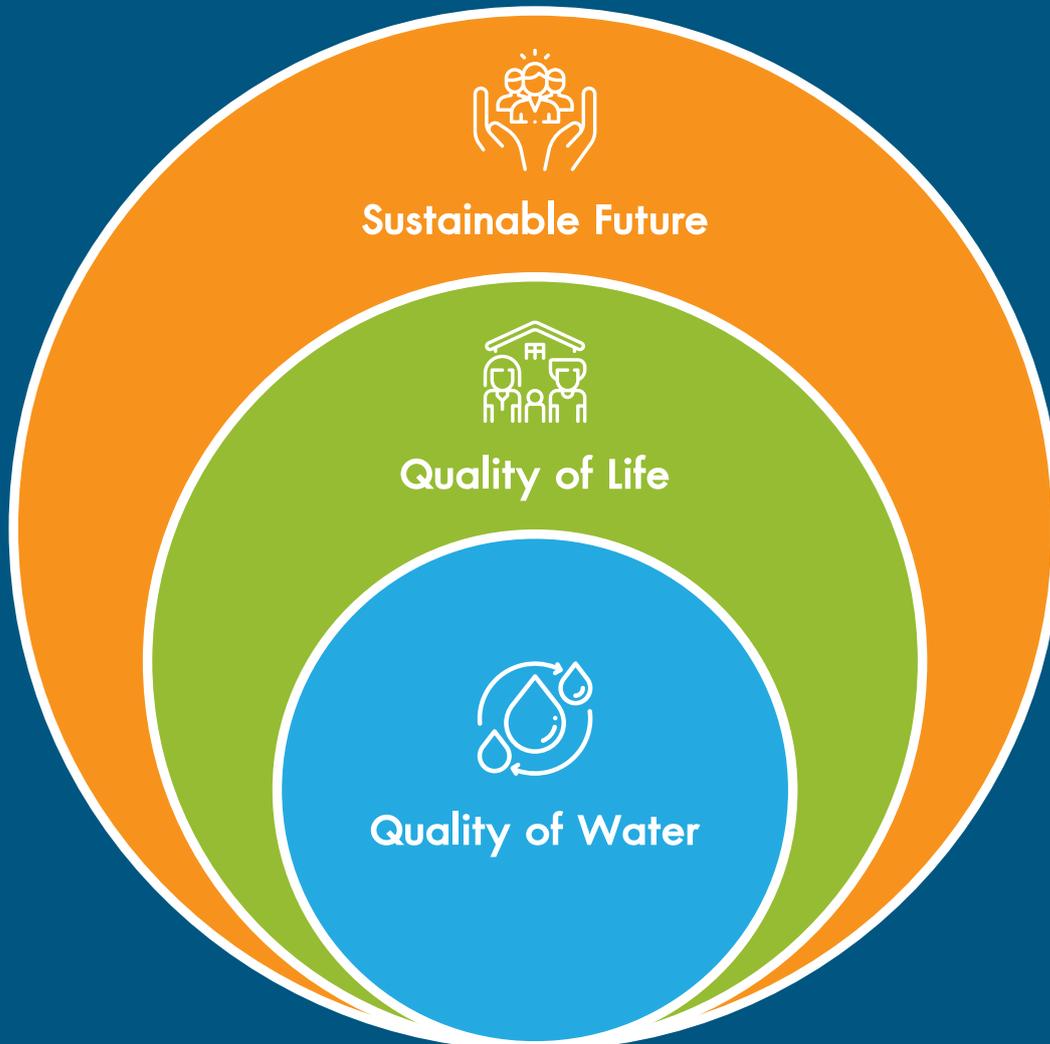
- Complete water management

## Middle Stream

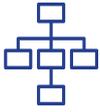
- Develop 3 dimensions in both economic, social and environmental aspects

## Downstream

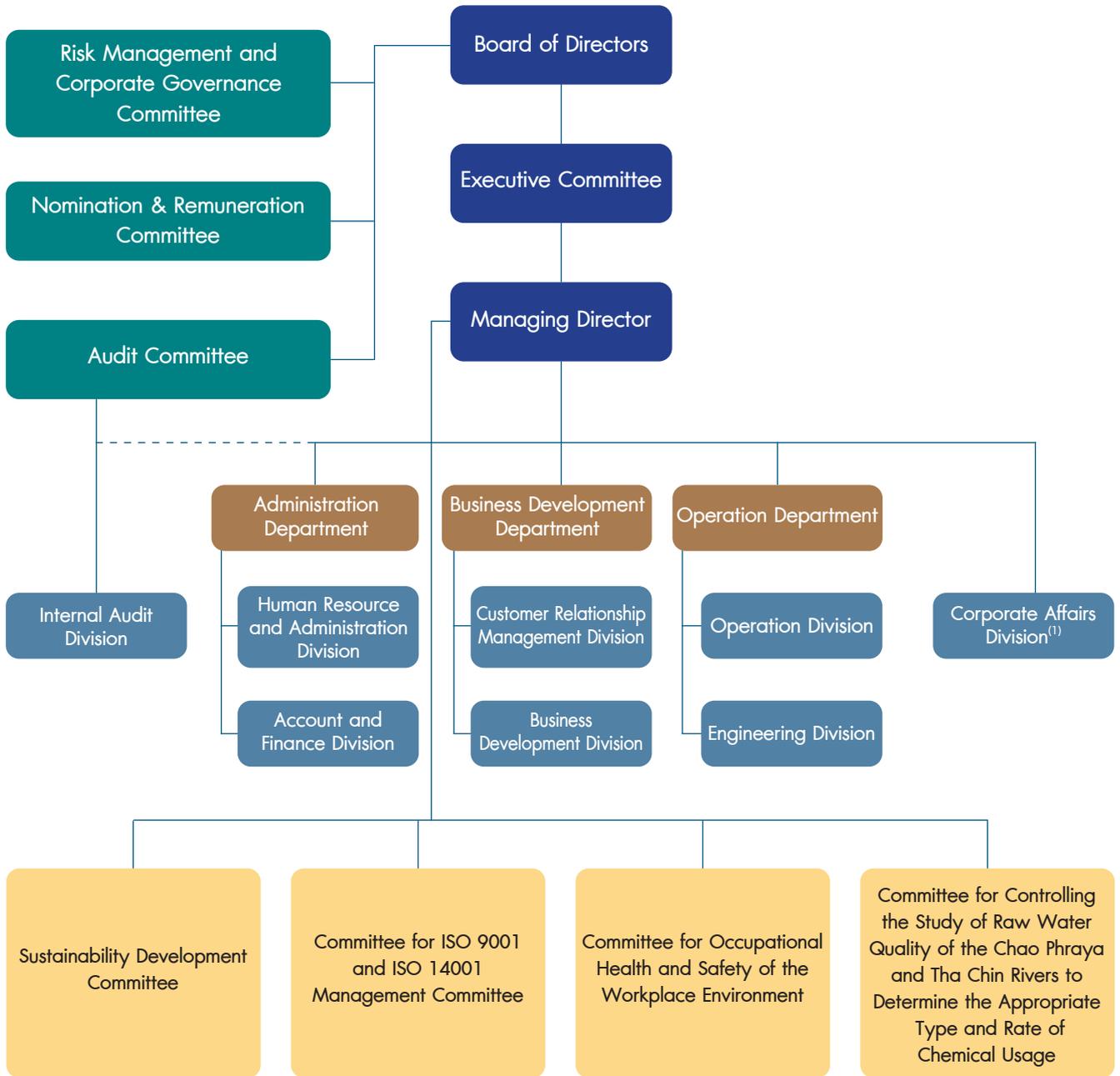
- Solve the problem of integrated water resources
- Create shared values between the organization and the stakeholders



The Company operates under the principles of good corporate governance, respect for human rights, employee stewardship, employee development and conduct business in line with the 14 UN SDGs in accordance with the United Nations Agreement Guidelines.



# Sustainable Development Structure



Remark: <sup>(1)</sup> Legal and Compliance Department under the Corporate Affairs Division

The Company appoints a Sustainability Development Committee responsible for internal sustainability management, consist of Managing Director, Assistant Managing Director (Administration Line), Assistant Managing Director (Operations Line), Director of Department together with appointing the Sustainability Development Working Group from various departments to carry out the task of implementing the assigned sustainability policies and measures to expand concrete results to cover all business areas of the Company.

In addition, the Company has appointed various committees within the organization to supervise and manage the operations of each area to be efficient and achieve the Company's goals.



# Assessment of Sustainability Issues

The Company emphasizes on sustainability management issues with a process of assessment and prioritization based on the Global Reporting Initiative framework (GRI), GRI Standard. Therefore, the Company collects and assesses sustainability issues through sustainability issues analysis, including using operational guidelines according to the Company's strategy and risk factors that may affect the Company's business operations in assessing the importance of sustainability issues.

## Assessment Process

### 1 Issue Analysis

Analyze issues throughout the Company's value chain covering operations from raw material sourcing, production, delivery, using of products and services for analysis of sustainability issues in related industries.

### 2 Identifying Issues

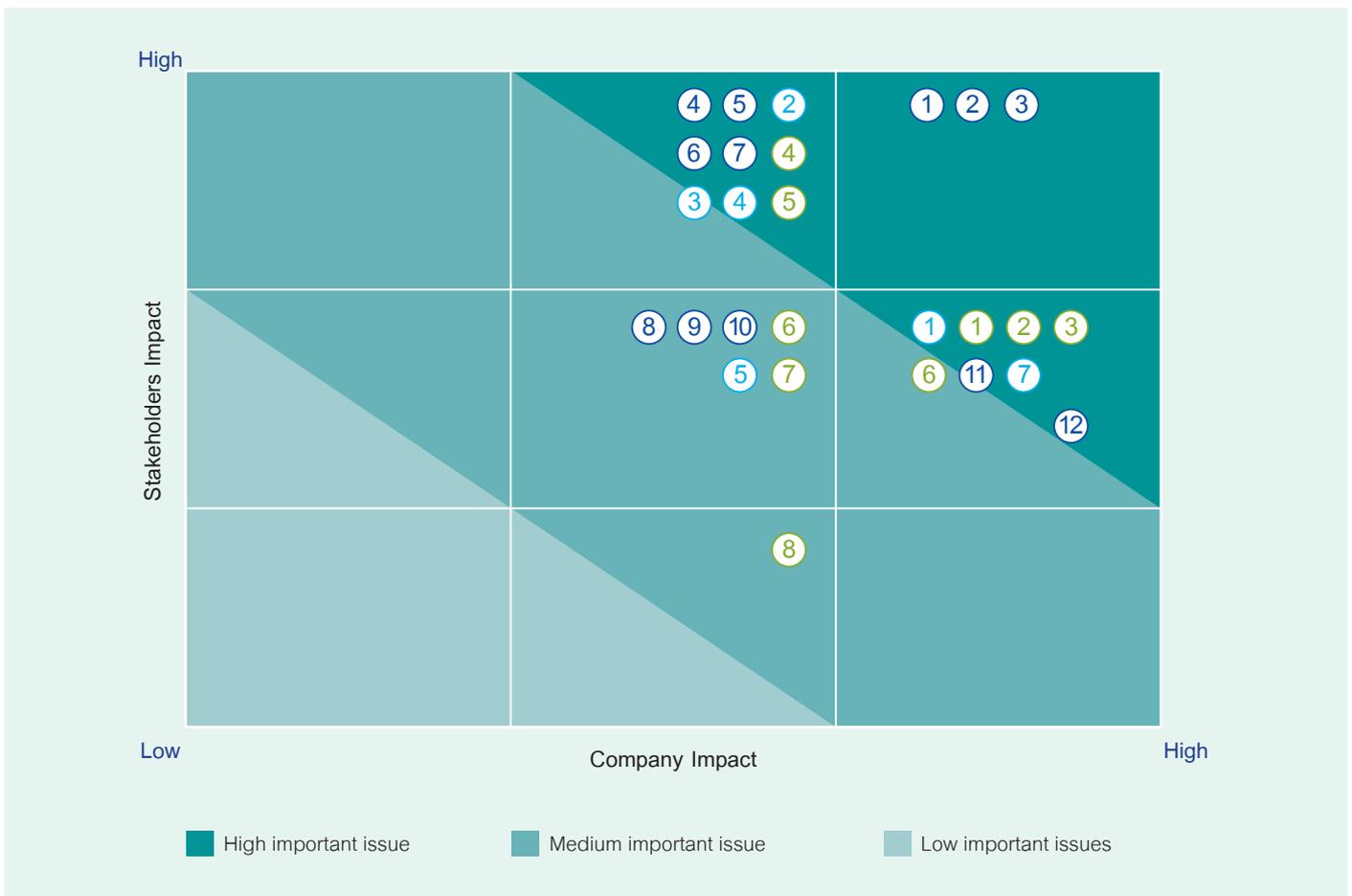
Define the important issues of the Company's business operations and stakeholders, it takes into account the current situation, covers new issues that may increase and downgrade the priorities of unrelated issues.

### 3 Priority Assessment

Arrange the priorities by responsible agency surveyed the expectations from stakeholders covering economic, social and environmental dimensions may be affected by the Company's business operations.

### 4 Assessment Certification

The results of the priority assessment are presented to the Company's Executives to verify the results.



## Economic

1. Business Sustainability
2. Good Corporate Governance
3. Risk Management and Business Continuity
4. Products and Services Responsibility
5. Stakeholders Compensation and Benefits
6. Building Image and Confidence
7. Crisis Management from the COVID-19 Situation
8. Indirect Impact of Doing Business
9. Value Chain Management
10. Business Partners for Sustainable Development
11. Serve Customers Demand and Satisfaction
12. Innovation and Technology

## Social

1. Equitable Treatment of Stakeholders
2. Occupational Health and Safety
3. Contribution and Donation to Society
4. Social and Community Development
5. Business Partner Social Impact Assessment
6. Equality and Human Rights
7. Employee Stewardship and Development

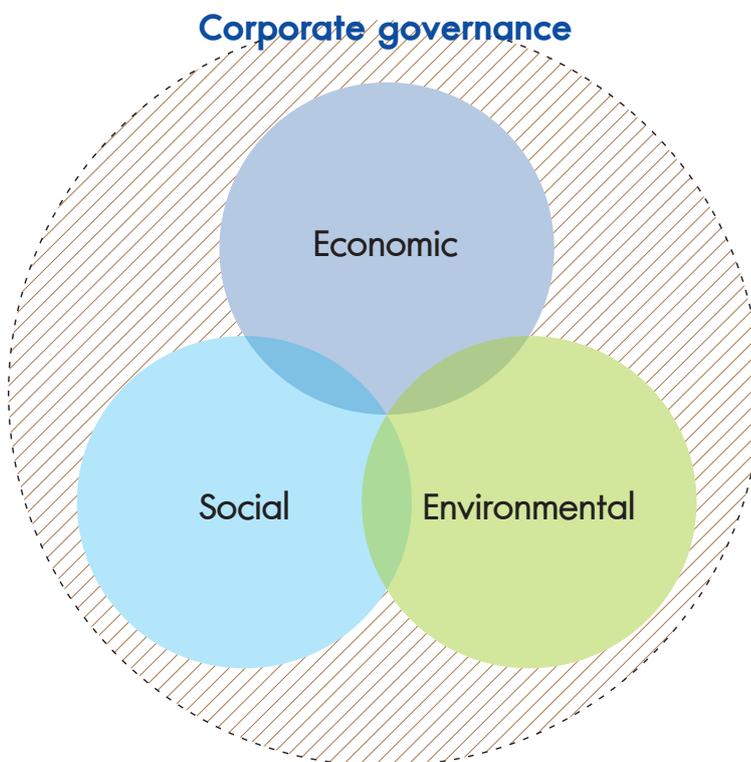
## Environmental

1. Compliance with Environmental Laws
2. Environmentally Friendly Process of Products and Services
3. Water Management
4. Waste and Unused Materials Management
5. Environmental Cooperation
6. Climate Change and Energy Conservation
7. Business Partner Environmental Impact Assessment
8. Biodiversity

## Key Issues Review and Improvement for the year 2020

- Added the issue of “COVID-19 crisis management” as a sustainability issue

## Sustainable Development Approach



## Economic

Operate the business to achieve the vision and mission based on the satisfaction and interests of the stakeholders

## Social

Operate business with integrity, take care of community and society, both in the service area and outside the service area

## Environmental

Adhere to environmental stewardship both within the process, worthwhile use of resources, natural resources conservation, and maintain a sustainable ecological balance



# Sustainability Issues with Sustainable Development Goals (SDGs)

## Sustainability Issues Analysis



The Company assesses and prioritizes sustainability issues which stakeholders giving emphasize, considering together with risk factors throughout the supply chain, based on the Global Reporting Initiative framework, GRI Standard. In 2020, stakeholders emphasize on 16 sustainability issues, the Company has taken such sustainability issues to analyze the risks and organization's opportunities, link them to the Sustainable Development Goals (SDGs).



Dimension	Sustainability Issues	Details	Risk	Opportunity	SDGs
Economic	Good Corporate Governance	<ul style="list-style-type: none"> <li>Policy, Operations under the principles of good governance, Board duties and responsibilities, transparency, report, and Anti-corruption</li> </ul>	<ul style="list-style-type: none"> <li>The development of good corporate governance of listed companies has increased steadily, if the Company adjusts slowly, it may affect the Company's future investment</li> </ul>	<ul style="list-style-type: none"> <li>Having good corporate governance principles, transparency, risks management covering economic, social and environmental aspects, which will affect investor confidence and promote sustainable investment in the future</li> </ul>	
	Risk Management and Business Continuity	<ul style="list-style-type: none"> <li>Risk management in economic, social and environmental aspects, incident prevention and suspension of emergencies to keep business running without interruption</li> </ul>	<ul style="list-style-type: none"> <li>In the current situation, new risks are always arising, which are unpredictable risks that may affect the Company's business operations</li> </ul>	<ul style="list-style-type: none"> <li>Risk management covering economic, social and environmental aspects, including new risks that may arise, there are regular training and emergency drills, resulting on effective standards of operation</li> </ul>	

**Economic**

Dimension	Sustainability Issues	Details	Risk	Opportunity	SDGs
Economic	Crisis Management from the COVID-19 Situation	<ul style="list-style-type: none"> <li>Crisis management from COVID-19 which the organization was affected</li> </ul>	<ul style="list-style-type: none"> <li>Due to there is no vaccine for COVID-19, it is contagious disease, if an employee is infected it may affect the confidence in the Company's business operations</li> </ul>	<ul style="list-style-type: none"> <li>The ability to professionally manage the epidemic of COVID-19 without impact to stakeholders. In this situation, the Company provides financial support and COVID-19 anti-epidemic equipment to hospitals and other departments, including the community in the service area</li> </ul>	  
	Supply Chain Management	<ul style="list-style-type: none"> <li>Management and risk analysis in the purchasing process, including assesses business partners for maximum efficiency</li> <li>Engaging with business partners in order to develop potential, including finding new business opportunities</li> </ul>	<ul style="list-style-type: none"> <li>The Company's business operation has relationships with stakeholders in the business value chain, which the Company has to analyze the relationship between the business and the stakeholders in each operating activity, this will lead to management of key sustainability issues throughout the value chain from affecting the Company's business operations</li> </ul>	<ul style="list-style-type: none"> <li>The Company analyzes which stakeholders are directly and indirectly affected by the business, resulting in the relationships management with each stakeholder appropriately and related with the organizational context</li> <li>Select business partner who has the potential to conduct business ethically, build cooperation in developing and enhancing the potential of business partners for sustainable growth together</li> </ul>	 
	Products and Services Responsibility	<ul style="list-style-type: none"> <li>Responsibility for producing quality products and services is acceptable to customers. Customer relationship management and impact assessment of the company's products and services</li> </ul>	<ul style="list-style-type: none"> <li>Today's technological developments, including climate change, have resulted in changing consumer behavior and making business practices obsolete</li> </ul>	<ul style="list-style-type: none"> <li>Quality products and services according to international standards, as well as satisfaction in using products and services of customers resulting to the organization is recognized and has an advantage over its competitors</li> </ul>	  
	Innovation and Technology	<ul style="list-style-type: none"> <li>Apply innovation and technology to work processes and promote the organization's innovation</li> </ul>	<ul style="list-style-type: none"> <li>Advances in innovation and technology have transformed the global society, causing the activities that have been traditionally practiced are obsolete, due to the high competition and uncertainty</li> </ul>	<ul style="list-style-type: none"> <li>Being a leader in innovations and technology that keep up with current situations, resulting to the stability of the business and the opportunity to expand new businesses in the future</li> </ul>	  

Dimension	Sustainability Issues	Details	Risk	Opportunity	SDGs
Social	Employee Stewardship and Development	<ul style="list-style-type: none"> <li>Personnel and labor relations Management, employee development and empowerment, policy and process of respect for the human rights of employees</li> </ul>	<ul style="list-style-type: none"> <li>Intense competition of current business as well as changing customer demands has resulted in the employees' knowledge and skills not developing to keep pace with the change</li> </ul>	<ul style="list-style-type: none"> <li>Continually developing knowledge and skills for employees to keep up with the changes will result in employees having the knowledge and skills to support rapid change both now and future</li> </ul>	
	Occupational Health and Safety	<ul style="list-style-type: none"> <li>Take care of the employees' health, safety and good working environment</li> </ul>	<ul style="list-style-type: none"> <li>The good health trends of employees who are not satisfactory, as well as safety in the work of employees and business partners may affect the confidence in operation of the Company</li> </ul>	<ul style="list-style-type: none"> <li>Raising the standard of safety and modern equipment in work, this will result in confidence in working together and become the Company's safety standard</li> </ul>	
	Social and Community Development	<ul style="list-style-type: none"> <li>Participate with community activities include helping to solve social problems and improve the quality of life of the community, educating, income generation, including the conservation of natural resources and the environment with the community</li> </ul>	<ul style="list-style-type: none"> <li>The Company's business operations in various areas affecting nearby communities, this includes the increase stakeholders and social expectations towards the Company's business that shows social and environmental responsibility</li> </ul>	<ul style="list-style-type: none"> <li>Using the Company's knowledge and abilities to become a model community that can be self-reliant and have a better quality of life by creating the participation of all parties</li> </ul>	
Environmental	Environmentally Friendly Process of Products and Services	<ul style="list-style-type: none"> <li>Manage production process for the Company's products and services that do not affect the environment, both inside and outside the organization</li> </ul>	<ul style="list-style-type: none"> <li>Growing global warming and climate change issues and cooperation in reducing GHG emission in accordance with the Paris Agreement in order to control the rise of the global average temperature below 2 degrees Celsius</li> </ul>	<ul style="list-style-type: none"> <li>Improve the production process to be environmentally friendly by establish a Solar Rooftop to reduce electricity consumption and develop waste into products. As a result, the cost of electricity consumption per product unit is reduced and promotes sustainable use of resources</li> </ul>	
	Water Management	<ul style="list-style-type: none"> <li>Water management using in the tap water business, water management with the communities and related agencies to solve water quality problems and sustainable water shortages</li> </ul>	<ul style="list-style-type: none"> <li>Climate change results in no seasonal precipitation, the amount of water in dams and natural water bodies has decreased or the quality of raw water degradation may affect the production of tap water</li> </ul>	<ul style="list-style-type: none"> <li>Enhance the ability to manage a complete range of water include upstream development, campaign to promote water conservation and worthwhile use of water by promoting integrated work with other organizations</li> </ul>	

Environmental

Dimension	Sustainability Issues	Details	Risk	Opportunity	SDGs
Environmental	Waste and Unused Materials Management	<ul style="list-style-type: none"> <li>Waste management does not affect business operation and stakeholders, including adding waste value using for business and social benefits</li> </ul>	<ul style="list-style-type: none"> <li>Urban and industrial growth resulting to increase waste materials, causing pollution and impact in the environment as well as the wasteful using natural resources, causing a shortage</li> </ul>	<ul style="list-style-type: none"> <li>Research and development for the reuse of waste materials or adding value to waste with waste management in accordance with the 3Rs principle and circular economy</li> </ul>	
	Climate Change and Energy Conservation	<ul style="list-style-type: none"> <li>Establish policies and measures for energy conservation. Establish project to reduce energy consumption and monitoring</li> </ul>	<ul style="list-style-type: none"> <li>Growing of global warming and climate change issues and cooperation in reducing GHG emission in accordance with the Paris Agreement in order to control the rise of the global average temperature below 2 degrees Celsius</li> </ul>	<ul style="list-style-type: none"> <li>Improve the production process to be environmentally friendly by establish a Solar Rooftop to reduce electricity consumption and develop waste into products</li> </ul>	
	Biodiversity	<ul style="list-style-type: none"> <li>Maintain and protect natural resources and ecosystem integrity that may be affected by the Company's business operations</li> </ul>	<ul style="list-style-type: none"> <li>Stakeholders have higher expectations of environmentally conscious business practices and the strictness of biological resource conservation laws</li> </ul>	<ul style="list-style-type: none"> <li>There is a system to prevent aquatic animals from entering the raw water pumping process as well as maintaining upstream, middle stream and downstream sources by monitoring the Company's upstream forest growth, resulting to the water source that is the input factor for the tap water production process is ecologically complete</li> </ul>	
	Environment Cooperation between Organization	<ul style="list-style-type: none"> <li>Raising awareness and participation in environmental stewardship with external agencies</li> </ul>	<ul style="list-style-type: none"> <li>Lack of cooperation with the environment between organizations may affect the environmental conservation and long-term business operation</li> </ul>	<ul style="list-style-type: none"> <li>Building cooperation in environmental stewardship with government, private and community organizations, what will be gained from the cooperation will be a large perspective that contributes to sustainability</li> </ul>	
	Compliance with Environmental Laws	<ul style="list-style-type: none"> <li>Establish the policies and operate according to the environmental management system related to ISO 14001</li> </ul>	<ul style="list-style-type: none"> <li>The strictness of environmental laws is increasing may affect the Company's operating costs</li> </ul>	<ul style="list-style-type: none"> <li>Raising awareness, taking care of the system and comply with environmental laws, it becomes an organizational culture that everyone acts with common sense</li> </ul>	

# Goals and Performance

The Company establishes goals and operation methods for each of 16 sustainability issues, including the results obtained from operations in 2020 are as follows:



Goals	Methods	Results
<b>1. Good Corporate Governance</b>		
<ul style="list-style-type: none"> <li>Establish guidelines for working under the principles of good governance to become a culture</li> <li>Zero of violation of the Company's code of conduct</li> </ul>	<ul style="list-style-type: none"> <li>Review the corporate governance policy</li> <li>Conduct business ethically</li> <li>Transferring knowledge of business ethics to employees at all levels</li> <li>Disseminate knowledge of business ethics on the website</li> <li>Report the results of corporate governance to the Risk Management and Corporate Governance Committee</li> </ul>	<ul style="list-style-type: none"> <li>Zero of violation of the Company's code of conduct</li> </ul>
<b>2. Risk Management and Business Continuity</b>		
<ul style="list-style-type: none"> <li>Manage corporate risks to be within acceptable criteria</li> <li>Zero of risk event affecting the Company's business operations</li> </ul>	<ul style="list-style-type: none"> <li>Review of economic, social and environmental risk assessments</li> <li>Review the organization's Emerging Risk</li> <li>Organize the risk management training course</li> <li>Rehearsing an Emergency Plan</li> <li>Report risk management results to the Risk Management Officer and Risk Management and Corporate Governance Committee according to the specified cycle</li> </ul>	<ul style="list-style-type: none"> <li>Zero of risk event affecting the Company's business operations</li> </ul>
<b>3. Crisis Management from the COVID-19 Situation</b>		
<ul style="list-style-type: none"> <li>Zero of employee infected with COVID-19</li> <li>Zero of stakeholder affected by the Company's business operations</li> <li>Zero of stop distribute tap water to customers from COVID-19 situation</li> </ul>	<ul style="list-style-type: none"> <li>Announce the BCP plan base on "Measures to prevent COVID-19" using in the operation</li> <li>Provide facilities for production processes and provide employees and stakeholders with the necessary resources to prevent the epidemic of COVID-19</li> <li>Provide corona virus insurance to employees</li> <li>Communicate and publicize to build confidence in business operations</li> </ul>	<ul style="list-style-type: none"> <li>Zero of employee infected with COVID-19</li> <li>Zero of stakeholder affected by the Company's business operations</li> <li>Zero of stop distribute tap water to customers from COVID-19 situation</li> </ul>

Goals	Methods	Results
<b>4. Supply Chain Management</b>		
<ul style="list-style-type: none"> <li>• Performance appraisal ratio of major business partner at 100%</li> <li>• Zero of business partner operating impact on business operation</li> <li>• The timely receipt ratio as agreed with the buyer and seller or specified in the purchase order at 90%</li> <li>• Zero of complaint from business partner</li> </ul>	<ul style="list-style-type: none"> <li>• Procurement under fair agreements</li> <li>• Establish a project for procurement of products and services that are environmentally friendly</li> <li>• Prepare a backup plan and intensify the delivery of products and find delivery channels that do not affect the production process, including finding new sources of replacement products, if there is an event that the same business partner is unable to deliver the products</li> </ul>	<ul style="list-style-type: none"> <li>• Performance appraisal ratio of major business partner at 100%</li> <li>• Zero of business partner operating impact on business operation</li> <li>• The timely receipt ratio as agreed with the buyer and seller or specified in the purchase order at 96%</li> <li>• Zero of complaint from business partner</li> </ul>
<b>5. Products and Services Responsibility</b>		
<ul style="list-style-type: none"> <li>• The distribution of tap water to the customers is not less than 318.10 million cubic meters</li> <li>• Survey of customer satisfaction result is not less than 90%</li> <li>• Zero of complaint from customers</li> </ul>	<ul style="list-style-type: none"> <li>• Production and distribution of tap water to customers according to quality standards that are sufficient and consistent</li> <li>• Provide regular consultation and meeting for working with customers</li> <li>• Provide training courses to develop skills for customers</li> <li>• Supporting customer relations activities</li> </ul>	<ul style="list-style-type: none"> <li>• The distribution of tap water to the customers of 318.97 million cubic meters</li> <li>• Survey of customer satisfaction at 96.50%.</li> <li>• Zero of complaint from customers</li> </ul>
<b>6. Innovation and Technology</b>		
<ul style="list-style-type: none"> <li>• Number of issues for process improvement working through Kaizen activities (Kaizen) no less than 356 activities</li> <li>• Increased productivity from 2019</li> <li>• Cost of electricity decreased from 2015</li> </ul>	<ul style="list-style-type: none"> <li>• Provide training to develop Kaizen skills both inside and outside the Company</li> <li>• Transferring knowledge and exchange experiences among departments through the Kaizen project (Kaizen or Exchange Program)</li> <li>• Improved the hybrid water supply process due to the combination of conventional and membrane water treatment systems</li> <li>• Membrane technology is applied in tap water production, which is an advanced technology capable of filtration of viral and bacterial pathogens which are internationally recognized</li> </ul>	<ul style="list-style-type: none"> <li>• Number of issues for process improvement working through Kaizen activities (Kaizen) of 363 activities.</li> <li>• The amount of tap water to customers increase from 2019 of 3.97 million cubic meters</li> <li>• TTW's electricity cost in 2020 decreased from 2015 (before the production process to be improved to Hybrid) at 24.80%</li> </ul>
<b>7. Employee Stewardship and Development</b>		
<ul style="list-style-type: none"> <li>• Survey of employees' satisfaction result is not less than 80%</li> <li>• The number of employees who resigned decrease from 2019</li> <li>• The number of training hours has increased from 2019</li> </ul>	<ul style="list-style-type: none"> <li>• Regularly review the employee performance appraisal process</li> <li>• Establish employee potential development plan</li> <li>• Establish employees training plans at all levels.</li> <li>• Consider selecting internal personnel before recruiting external personnel</li> <li>• Arrange for an election of the Welfare Committee</li> <li>• Employees satisfaction survey</li> <li>• Giving scholarships for employees' children</li> </ul>	<ul style="list-style-type: none"> <li>• Survey of employee satisfaction at 78%</li> <li>• The number of employees who resigned decrease from 2019 of 2 persons or 20%</li> <li>• The number of training hours has decreased from 2019 of 1,321 hours or 29%</li> </ul>

Goals	Methods	Results
<b>8. Occupational Health and Safety</b>		
<ul style="list-style-type: none"> <li>Percentage of employees receives an annual check-up at 100%</li> <li>Zero of occupational illnesses</li> <li>Zero of operational accident</li> </ul>	<ul style="list-style-type: none"> <li>Provide employees an annual check-up, adding a special health check for employees working at risk area and employees over 35 years</li> <li>Assess environmental factors that may affect the health and safety of employees, such as light, noise, dust, pollution, etc.</li> <li>Regularly training and develop safety knowledge</li> <li>Regular rehearsal of emergency plans to prepare for critical situations</li> <li>Annual review of risks and emergencies in working processes</li> </ul>	<ul style="list-style-type: none"> <li>Percentage of employees receives an annual check-up at 100%</li> <li>Zero of occupational illnesses</li> <li>Zero of operational accident</li> </ul>
<b>9. Social and Community Development</b>		
<ul style="list-style-type: none"> <li>The number of communities' benefits from the Company's corporate social responsibility operations not less than 30 communities</li> <li>The number of projects or activities on corporate social responsibility not less than 10 projects</li> <li>Zero of complaint from the community</li> </ul>	<ul style="list-style-type: none"> <li>Supporting scholarships for students in schools with a shortage in service areas</li> <li>Renovation of the school building, installing water filtration systems and improving the landscape of the school in the service area</li> <li>Transferring knowledge on water conservation to schools and communities</li> <li>Produce and support our stakeholders with bottled water for use in socially beneficial activities</li> <li>Financial support to stakeholders using in activities beneficial to society</li> <li>Supporting activities on Buddhism and preserve good Thai traditions</li> <li>Solving social problems in times of crisis</li> </ul>	<ul style="list-style-type: none"> <li>The number of communities that benefit from the Company's corporate social responsibility operations of 66 communities</li> <li>The number of projects or activities on corporate social responsibility of 20 projects.</li> <li>Zero of complaint from the community</li> </ul>
<b>10. Environmentally Friendly Process of Products and Services</b>		
<ul style="list-style-type: none"> <li>Chlorine usage cost per product unit decrease from 2019</li> <li>The amount of electricity consumption per product unit reduces not less than 0.05%</li> <li>The amount of GHG emission per product unit reduced not less than 0.05%</li> </ul>	<ul style="list-style-type: none"> <li>Produce tap water without loss of water with Zero Discharge</li> <li>Establish procurement of products and services project</li> <li>Membrane technology is applied in the tap water process, which able separate suspended solids or dissolved solids from liquid and can remove contaminants, pathogens such as viruses and bacteria</li> <li>Operate and monitor the performance in accordance with the environmental standard system that has been certified by external agency (ISO 14001)</li> </ul>	<ul style="list-style-type: none"> <li>Chlorine usage cost per unit of product decrease from 2019 at 21.47%</li> <li>The amount of GHG emission per product unit compared with the 2019, TTW increase at 7.50%, PTW decrease at 4.10%</li> </ul>

Goals	Methods	Results
<b>11. Water Management</b>		
<ul style="list-style-type: none"> <li>The ratio of water recovery is not less than 5% of the total amount of water entering the production process</li> </ul>	<ul style="list-style-type: none"> <li>The residual water from the sludge extraction process will be reused in the tap water production process.</li> <li>Establish a project responding to the people's tap water demand in collaboration with PWA, in order to support standardized tap water accession</li> <li>Campaign to promote activities to maintain water sources and water quality of the Tha Chin River and canals in the service area</li> <li>Monitor water sources with relevant external agencies such as Department of Water Resources, Royal Irrigation Department, Regional Environmental Office 5, Metropolitan Waterworks Authority, Provincial Waterworks Authority, Private agency and the We Love Tha Chin River Club</li> </ul>	<ul style="list-style-type: none"> <li>The ratio of water recovery at 2% of the total amount of water entering the production process</li> </ul>
<b>12. Waste and Unused Materials Management</b>		
<ul style="list-style-type: none"> <li>The number of products from waste in the production process to be used for social benefits is 1 type</li> <li>The number of communities' benefit from waste products were 1 community</li> </ul>	<ul style="list-style-type: none"> <li>Waste is sorted into 3 types: general waste, recycle waste and toxic waste</li> <li>Establish a project of compost from sludge with 1: 2 ratio of food waste, in order to take care of plants in Thairath Wittaya 4 School, Nakhon Pathom Province</li> <li>The products obtained from sludge research are used to enhance the livelihoods of the community, by using "clay tiles" to decorate the school buildings of Wat Sukwattanaram School, Nakhon Pathom Province and Wat Rat Thammaram School, Samut Sakhon Province</li> </ul>	<ul style="list-style-type: none"> <li>The number of products from waste in the production process to be used for social benefits is 2 types</li> <li>The number of communities' benefit from waste products were 3 communities</li> </ul>
<b>13. Climate Change and Energy Conservation</b>		
<ul style="list-style-type: none"> <li>The amount of electricity consumption per product unit reduces not less than 0.05%</li> <li>The amount of GHG emission per product unit reduced not less than 0.05%</li> </ul>	<ul style="list-style-type: none"> <li>Establish project for procurement of products and services that are environmentally friendly</li> <li>Establish the Solar Rooftop project on the roof of the clear water tank of the company</li> <li>Join the energy conservation project of the Department of Alternative Energy Development and Efficiency, Ministry of Energy</li> <li>Establish Care the Bare project cooperated with the Stock Exchange of Thailand</li> </ul>	<ul style="list-style-type: none"> <li>The amount of electricity consumption per product unit, TTW increase at 11.14% and PTW decrease 4.37%</li> <li>GHG emission per product unit, TTW increase at 7.50%, PTW decrease at 4.10%</li> <li>The amount of GHG emission decreased from the Company's events in the amount of 1,109.07 kilograms of carbon dioxide equivalent (KgCO<sub>2</sub>e)</li> </ul>

Goals	Methods	Results
<b>14. Biodiversity</b>		
<ul style="list-style-type: none"> <li>The number of projects or activities in caring for conservation areas or natural resources not less than 1 project</li> <li>Zero of complaint from stakeholders about the impact of the Company's business operations on conservation areas or natural resources</li> </ul>	<ul style="list-style-type: none"> <li>Establish a mesh cover in front of the raw water pump pipe to prevent fish and aquatic animals from entering the production process</li> <li>The residual water from the sludge extraction process will be reused in the tap water production process, in order to prevent the release of waste water into the Tha Chin River and Chao Phraya River</li> <li>Establish campaign to promote the conservation of the Tha Chin River and its branch canal.</li> <li>Establish marine litter collection activities with the Natural Resources and Environment Samutsakhon Provincial Office, under the Mangrove Forest Research Project, Bang Ya Phraek, Samut Sakhon Province</li> </ul>	<ul style="list-style-type: none"> <li>The number of projects or activities in caring for conservation areas or natural resources was 3 projects</li> <li>Zero of complaint from stakeholders about the impact of the Company's business operations on conservation areas or natural resources</li> </ul>
<b>15. Environment Cooperation between Organization</b>		
<ul style="list-style-type: none"> <li>The number of projects or activities related to environmental stewardship with external agencies not less than 1 project</li> <li>The number of external agencies cooperates in projects or activities related to environmental stewardship with the Company not less than 2 agencies</li> </ul>	<ul style="list-style-type: none"> <li>Establish campaign to promote the conservation of the Tha Chin River and its branch canal in collaboration with the We Love Tha Chin River Club, Nakhon Pathom Province. And the Regional Environmental Office 5</li> <li>Establish marine litter collection activities with the Natural Resources and Environment Samutsakhon Provincial Office, under the Mangrove Forest Research Project, Bang Ya Phraek, Samut Sakhon Province</li> </ul>	<ul style="list-style-type: none"> <li>The number of projects or activities related to environmental stewardship with external agencies was 6 projects</li> <li>The number of external agencies cooperates in projects or activities related to environmental stewardship with the Company was 4 agencies</li> </ul>
<b>16. Compliance with Environmental Laws</b>		
<ul style="list-style-type: none"> <li>The number of internal audits ISO 14001 environmental system management not less than 1 time</li> <li>Received ISO 14001 environmental certification from external agencies</li> <li>Zero of violation of environmental laws</li> </ul>	<ul style="list-style-type: none"> <li>Waste is sorted into 3 types: general waste, recycle waste and toxic waste</li> <li>Establish the company's environmental objectives and follow the established indicators</li> <li>Prepare environmental action plans and report operating results to Management on a regular basis</li> <li>Conduct regular environmental risk assessments</li> <li>Conduct an Internal Audit ISO 14001, the Company's environmental operations comply with the specified standards at least once per year</li> </ul>	<ul style="list-style-type: none"> <li>The number of internal audits ISO 14001 environmental system management was 1 time during December 12, 2019 - January 20, 2020</li> <li>Received ISO 14001 environmental certification from SGS (Thailand) Company Limited</li> <li>Zero of violation of environmental laws</li> </ul>

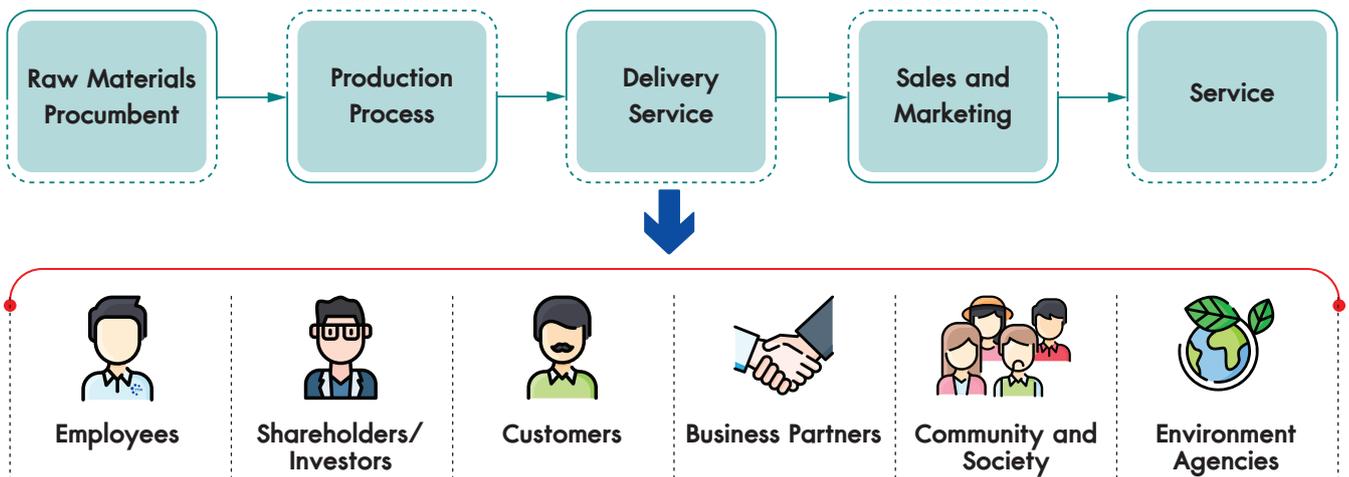


# Stakeholder Engagement

From the Company's vision "To be Thailand's Leading Company in Water, Energy and Eco-Friendly Businesses" aim to operate business that is environmentally friendly completely. Stakeholders management is an important issue that the Company has consistently acted in line with the vision by using stakeholder management information in the Company's strategic planning, in addition using of conceptual frameworks and other strategic planning tools in order to meet the needs and expectations of all stakeholders, including creating a balance between value and business operations values for stakeholders, as well as building good relationships and confidence in business operations between the Company and stakeholders.

## Relationship between the Business and Stakeholders in the Value Chain

The Company analyzes relationship between business and stakeholders in each operating activity, leading, which leading to analysis and management of key sustainability issues which is important to added value to products and services and creating the Company competitiveness, consisting of five main activities which are continuous and related from upstream to downstream in the value chain as follows:



## Stakeholders Management Process

1. Define stakeholder groups and prioritize them, based on three criteria:
  - Stakeholders involved in the Company's business operation.
  - The company creates a sustainable impact on the stakeholders.
  - Key stakeholders impact the Company's sustainability.
2. Stakeholders management
  - Define the stakeholder's responsible work segment.
  - Define a method for surveying stakeholder needs and expectations.
  - Collect stakeholders' needs and expectations.
3. Analysis and selection of key points
  - Consider the importance of needs and expectations issues of the stakeholders in the context of their impact, risk, chance according to corporate policies and goals, both in terms of importance to stakeholders and organization.
4. Implementing the results
  - Submit the analysis results to the Company's Sustainability Development Committee in order to determine the sustainability operation direction and establish the Company's strategy.

The Company divides the stakeholders into 6 groups which are: employees, shareholders, customers, business partners, communities, environment agencies. There are operating models to serve different demands and expectations.

Stakeholders	Needs/ Expectations	Participation Guidelines	Examples of action in the Report	Results
 <b>Employees</b>	<ul style="list-style-type: none"> <li>• Reasonable compensation and benefits</li> <li>• Workplace safety</li> <li>• Knowledge potential development</li> <li>• Freedom of expression opinions and suggestions</li> <li>• Equality and fairness</li> <li>• Career growth and stability</li> <li>• Good working environment</li> <li>• Supervise the epidemic prevention of COVID-19 situation appropriately and effectively</li> </ul>	<ul style="list-style-type: none"> <li>• Executives meet employees activity</li> <li>• Kaizen activity</li> <li>• Knowledge and experience exchange in managing the tap water plant</li> <li>• Competencies Training &amp; Development in the level of executives and employees</li> <li>• Health and safety activities</li> <li>• Communicate through various channels</li> <li>• Listen to employees' complaints and opinions</li> <li>• Giving scholarships for employees' children</li> <li>• Organize employees' birthday party on a monthly basis</li> <li>• Creating a positive work environment</li> <li>• Manage workplaces and provide equipment to prevention of epidemic COVID-19 situation</li> </ul>	<ul style="list-style-type: none"> <li>• Employee education and training</li> <li>• Giving scholarships for employees' children</li> <li>• Annual health check-up</li> <li>• Safety training and fire drill</li> <li>• Welfare Committee election</li> <li>• Organize employees' birthday party on a monthly basis</li> <li>• Organize Buddhist activities for employees</li> <li>• Organize recreational activities for employees</li> <li>• Provide facilities and equipment to prevent the epidemic of Covid-19 situation</li> </ul>	<ul style="list-style-type: none"> <li>• Zero of accident with loss workday case</li> <li>• Training hours decreases from 2019 at 29.40%</li> <li>• Survey of employees' satisfaction increase from 2019 at 4%</li> <li>• Zero of employee infected with COVID-19</li> </ul>
 <b>Shareholders/ Investors</b>	<ul style="list-style-type: none"> <li>• The company's performance has improved steadily.</li> <li>• Business growth</li> <li>• Consistently good returns</li> <li>• Business stability</li> <li>• Good corporate governance</li> <li>• Equitable treatment of shareholders</li> <li>• Receive accurate, complete and timely information</li> <li>• Manage risks appropriately and efficiently</li> <li>• Supervise the epidemic prevention of COVID-19 situation appropriately and effectively</li> </ul>	<ul style="list-style-type: none"> <li>• Annual General Meeting of Shareholders</li> <li>• Annual Report</li> <li>• Quarterly performance reporting</li> <li>• Opportunity Day</li> <li>• Inviting investors to visit the production process</li> <li>• Disclosure of information through corporate communication channels</li> <li>• Securities analyst meeting</li> <li>• Equitable treatment both minority and majority shareholders</li> <li>• The time limit for disclosure information in accordance with the relevant rules and regulations.</li> <li>• Communicate information and hold an Annual General Meeting of Shareholders suitable the circumstances of COVID-19</li> </ul>	<ul style="list-style-type: none"> <li>• Annual General Meeting of Shareholders</li> <li>• Opportunity Day</li> <li>• Investors visit the water production process.</li> <li>• Communicate information and hold an Annual General Meeting of Shareholders suitable the circumstances of COVID-19</li> </ul>	<ul style="list-style-type: none"> <li>• Net sales from the Company's business operations increase from 2020 at 0.61%</li> <li>• Listed for Thailand Sustainability Investment 2020 for the fifth consecutive year</li> <li>• The corporate governance assessment at "Excellent level"</li> <li>• 2020 ESG 100 award for the fifth consecutive year</li> </ul>

Stakeholders	Needs/ Expectations	Participation Guidelines	Examples of action in the Report	Results
 <p>Customers</p>	<ul style="list-style-type: none"> <li>• Tap water has quality as agreement, with sufficient quantity and continuity</li> <li>• Receiving accurate information of product and service.</li> <li>• Fairly treatment on contracts or agreements</li> <li>• Continuously support customer activities</li> <li>• Supervise the epidemic prevention of COVID-19 situation appropriately and effectively</li> </ul>	<ul style="list-style-type: none"> <li>• Quality tap water distribution according to the contract with sufficient quantity and continuity</li> <li>• Tap water pipes installation support and increasing pressure</li> <li>• Hold a meeting as specified</li> <li>• Attend to listen the problems and receives the complaints</li> <li>• Provide visiting production process</li> <li>• Provide information of raw water quality, tap water quality and other according to appropriate channel</li> <li>• Supporting training to increase working potential for customers</li> <li>• Hold an offsite meeting</li> <li>• Manage workplace and improve quality of life for customers</li> <li>• Supporting scholarships for customers' children</li> <li>• Organize social activities with the company</li> <li>• Survey of customer satisfaction to meet the need of customers</li> <li>• Communicate information, hold a meeting and provide equipment to prevent epidemic of COVID-19 situation</li> </ul>	<ul style="list-style-type: none"> <li>• Hold monthly meeting</li> <li>• Tap water pipes installation support for customers</li> <li>• Training to increase customers knowledge skills</li> <li>• Supporting the project improvement quality of life services of tap water users and communities</li> <li>• Manage workplace for customers</li> <li>• Giving scholarships for customers' children</li> <li>• Organize recreational activities for customers</li> <li>• Communicate information, hold a meeting and provide equipment to prevent epidemic of COVID-19 situation</li> </ul>	<ul style="list-style-type: none"> <li>• 2020 Customer satisfaction score at 96.50%</li> <li>• Tap Water distribution capacity increase from 2019 at 1.25%</li> <li>• Tap water users increase from 2019 at 3.70%</li> </ul>
 <p>Business Partner / Deliverer</p>	<ul style="list-style-type: none"> <li>• Compliance with commercial terms</li> <li>• Fairly compliance with agreement</li> <li>• Participate in problem solving and develop, improve working process</li> <li>• Promote and support the organization of various activities</li> <li>• Supervise the epidemic prevention of COVID-19 situation appropriately and effectively</li> </ul>	<ul style="list-style-type: none"> <li>• Fairly compliance with commercial terms and agreements</li> <li>• Accurately and clearly communicate information</li> <li>• Meeting regularly to improve the work.</li> <li>• Participate in customer's problem solving</li> <li>• Supervise the epidemic prevention of COVID-19 situation appropriately and effectively</li> </ul>	<ul style="list-style-type: none"> <li>• Evaluate the performance of key business partners</li> <li>• Communicate information, hold a meeting and provide equipment to prevent epidemic of COVID-19 situation</li> <li>• Training to develop working processes with business partners</li> </ul>	<ul style="list-style-type: none"> <li>• The timely receipt ratio as agreed with the buyer and seller or specified in the purchase order at 96%</li> <li>• Zero of complaint from business partner</li> </ul>

Stakeholders	Needs/ Expectations	Participation Guidelines	Examples of action in the Report	Results
 <p>Community and Society</p>	<ul style="list-style-type: none"> <li>• Support beneficial activities for the community</li> <li>• Do not create a negative impact on the Community</li> <li>• Participation in solving community problems</li> <li>• Transparency business operations</li> <li>• Supervise the epidemic prevention of COVID-19 situation appropriately and effectively</li> </ul>	<ul style="list-style-type: none"> <li>• Meeting to listen the Community's opinions</li> <li>• Communication and visiting the communities</li> <li>• Engaging in activities with public and private agencies in conducting social activities.</li> <li>• Surveying of opinions and complaints</li> <li>• Establish a project to improve the quality of life and well-being of the community</li> <li>• Supporting the communities to prevention of epidemic of COVID-19 situation</li> </ul>	<ul style="list-style-type: none"> <li>• Supporting scholarships for students in the schools with a shortage</li> <li>• Improve the school landscape in the service area</li> <li>• Installing drinking water filtration systems for underprivileged schools in service areas</li> <li>• Renovation of the school building in the schools with a shortage</li> <li>• Transferring knowledge on water saving and natural water sources conservation to schools and communities</li> <li>• Produce and support bottled water for the community</li> <li>• Using the products obtained from the waste development to benefit the community</li> <li>• Supporting Buddhist activities for communities</li> <li>• Supporting financial, bottle water and equipment to prevent epidemic of COVID-19 situation</li> </ul>	<ul style="list-style-type: none"> <li>• The number of communities were benefiting was 66</li> <li>• The number of projects or activities related to social responsibility was 20</li> <li>• The communities generate income from the production of bottled water in the amount of 148,800 baht</li> <li>• The communities generate income from the production of tiles decorate in the amount of 48,000 baht</li> <li>• Zero of communities' complaints from the impacts of the Company's business operation</li> </ul>
 <p>Environment Agencies</p>	<ul style="list-style-type: none"> <li>• Take part in solving problems and conserving energy and the environment</li> <li>• Without creating a negative impact on the environment</li> <li>• Supporting beneficial environment activities</li> <li>• Supervise the epidemic prevention of COVID-19 situation appropriately and effectively</li> </ul>	<ul style="list-style-type: none"> <li>• Establish energy and environmental conservation projects / activities within the organization and outside the organization</li> <li>• Publish and publicize environmental conservation projects / activities</li> <li>• Meeting with environmental agencies to mutually find out the solution solving the problems</li> <li>• Supporting the environmental agencies to prevent the epidemic of COVID-19 situation</li> </ul>	<ul style="list-style-type: none"> <li>• The residual water from the sludge extraction process will be reused in the tap water production process</li> <li>• Establish a project for procurement of products and services that are environmentally friendly</li> <li>• Monitoring and evaluate the Solar Rooftop project on the Company's transparent water tank</li> <li>• Separating food waste with general waste</li> <li>• Operate in accordance with the environmental certification ISO 14001</li> <li>• Establishing a compost project based on sludge in collaboration with Thairath Wittaya 4 School</li> <li>• The research results of sludge in construction materials were used in the improvement of the school buildings of Wat Sukwattanaram School, Nakhon Pathom and Wat Rat Thammaram School, Samut Sakhon</li> <li>• Organize a campaign promoting the Tha Chin river conservation and its branch canal in collaboration with the We Love Tha Chin River Club, Nakorn Pathom.</li> </ul>	<ul style="list-style-type: none"> <li>• The number of projects / activities in environmental stewardship was 6 projects</li> <li>• The amount of GHG emission per product unit increase from 2019 at 7.30%.</li> <li>• The amount of electricity consumption per product unit increase from 2019 at 11.48%</li> <li>• The amount of sludge to be developed in to products using benefit of society was 10 tons</li> <li>• The number of communities' benefit from the sludge developed products was 3 communities, namely Wat Sukwattanaram School, Thairath Wittaya 4 School and Wat Rat Thammaram School</li> <li>• Zero of environmental complaint from external agencies</li> </ul>

## Stakeholders' Feedback to the Company



**Mr. Siraphob Charoenying**  
Managing Director  
Paradise Service Center Company Limited

"TTW has correct and transparent guidelines for screening and auditing the business partner in accordance with good governance principles, enable developing their supply chain and improving industries towards sustainable practices and more ethical"



**Ms. Korakoch Moryadee**  
Procurement Manager  
TTW Public Company Limited

"TTW creates a TEAMWORK atmosphere, encourages employees exercise for good health, provides a welfare "Provident Fund" with opportunity both save money and invest, so that we have money spend during retirement"



**Mr. Prasert Sahasapas**  
Managing Director  
P S Trading 2016 Company Limited

"TTW provides occupational safety and health training course as well as provides adequate and appropriate personal protection equipment for employees, this result to having safe and hygienic work environment"



**Mr. Nuttawat Channingam**  
President of We Love Tha Chin River Club

"TTW has joined our club, organizing educational activities for villagers in Nakhon Pathom to conserve the Tha Chin River, as well as cultivate the youth's awareness taking care of the Tha Chin River"



**Ratchasak Yeursawang**  
Primary 6 Student  
Muang Kao Kamphaeng Sean School

"Thank you to TTW has given me a scholarship to build the future of learning for me, this funding helps children in disadvantaged families get a higher education"



**Dr. Ponchai Pongpraphakorn, M.D.,**  
Deputy Director of the Kratumbean Hospital

"Thank you to TTW for providing the medical equipment which is considered to be an encouragement to personnel and staff in taking care and helping people from the epidemic of COVID-19 situation"



**Mr. Phaitoon Pongrod**  
PWA Managers of Regional Offices  
Samut Sakhon Branch

"I'm confident in TTW's tap water production process that is clean and safe from the COVID-19 virus due to the modern filtration system and the addition of chlorine to kill germs, bacteria and viruses"



**Mr. Boonlert PhanKhaopod**  
Technician of Banglen Water Treatment Plant  
TTW Public Company Limited

"I have been working with TTW since 2005 until now for over 15 years, I feel very stable in the company, I have been given a variety of job opportunities. Besides me, the company has encouraged all talented employees to advance in their careers"



## Good Corporate Governance Policy

The Board of Directors realizes the importance of good corporate governance, therefore, establishes Good Corporate Governance Policy in written form as a guideline for the Board of Directors, executives and employees to practice fair, transparent, verifiable and efficient organizational management, covering five important matters in accordance with the Stock Exchange of Thailand which are; shareholders' rights, equitable treatment of shareholders, stakeholder roles, disclosure of information and transparency, and board responsibility to enable the Board of Directors, executives and employees apply the following principles in their operations;

1. The Board of Directors strives to create more value for the Company in long term by supervising and operating carefully according to the capacity for the shareholders' benefit maximum while taking care to prevent conflicts by responsible for decisions and actions as the Board of Directors.
2. The Board of Directors will equally treat all the shareholders and stakeholders with fairness.
3. The Board of Directors operates with transparency and verification by disclosing accurate, complete, and timely information to all stakeholders.
4. The Board of Directors conducts business with regard to risks on a regular basis by implementing appropriate control and risk management.
5. The Board of Directors has established the code of conduct for directors, executives, and employees, whereby the Board of Directors must act as an example as well as a role model for executives and employees in accordance with the principles of the Company's corporate governance.
6. The Board of Directors is required to conduct an annual self-assessment on a regular basis to serve as a framework for reviewing the Board's performance.

The Board of Directors is aware of compliance with the CG Code by the Office of the SEC and thus has adapted said principles to be in line with the Company's operations. The corporate governance policy is reviewed annually and the criteria are adjusted based on the foundational principles of good corporate governance and in accordance with the changing environment.

## Board of Directors

The Board of Directors consists of 12 members, 4 of which are independent directors and 2 females. The Board Diversity has skills that are in line with the Company's business strategy as the Board Skills Matrix table which are disclosed in the form 56-1 for the year ended December 31, 2020, page 59, on the Company's website: [www.ttwplc.com](http://www.ttwplc.com)

## Director Nomination

The Nominating and Remuneration Committee consider from the list of shareholders proposing as the Company grants shareholders the right to nominate directors, and the Thai Institute of Directors Association's charter directors (IOD). The Committee is responsible for screening all persons to be appointed as directors, whether they are directors representing shareholders or independent directors, proposing to the Board of Directors for consideration in the event that the director's position is vacant due to reasons other than the termination of office, and proposing to the shareholders' meeting in the event that the directors complete their term by consider the following factors;

1. Gender diversity, age, knowledge, ability, experience and expertise in various fields as needed by using Director Qualifications and Skills Matrix for consideration in accordance with legal requirements, notifications of the SET and SEC, and the Company's Articles of Association which consistent with the strategic plan in accordance with the good corporate governance principles for the benefit of the Company's business development.
2. Work experiences that transparent, unblemished, moral, virtuous, responsible, maturity and professional.

## Director Compensation Policy

The Board of Directors considers remuneration on a fair and reasonable basis compared with similar industries, this includes the experience, scope of duties and responsibilities of each director as well as duties and responsibilities from being a member of the sub-committees, then propose to the shareholders' meeting for approval. The remuneration of the Board of Directors and executives are required to disclose in the Annual Report and the Company's financial statements.

## Compensation Criteria

The Company defines the composition of compensation in two parts are as follows:

### Part 1 Annual Fee consist of

#### 1.1 Retainer fee

It is the remuneration paid to directors on a monthly basis whether or not there are meetings by considering the operating results and the ability to operate according to goals.

#### 1.2 Attendance Fee

It is the remuneration paid to each director attending the meeting which is paid only to directors who attend the meeting.

### Part 2 Incentive Fee / Bonus

It is a special remuneration paid to directors once a year by linking with the value created for shareholders such as the company's profits or dividends paid to shareholders.

## Corporate Governance Structure

The Company establishes guidelines for good corporate governance, with the Board of Directors defining roles in controlling and supervising the management's operations, including planning strategies, policies and operating organization's direction, providing effective corporate governance, create a good image for stakeholders, including transparent and fair confidence in the management system. In 2020, in the Board of Directors' meeting No. 3/2020 held on July 30, 2020 considered restructuring the sub-committees to create a more compact and flexible management from the original five committees to four committees, which are:

1. Executive Committee
2. Audit Committee
3. Nomination and Remuneration Committee
4. Risk Management and Corporate Governance Committee

In addition, defining the structure of the sub-committees consisting of the managing director, non-executive director, and independent director, as well as, roles and duties of the sub-committees are clearly defined and all committees shall report their performance directly to the Board of Directors. Details of the sub-committees and their roles and responsibilities can be found in the 2020 Annual Report "Corporate Governance Structure".

Risk Management and Corporate Governance Committee consist of 5 members are as follows:

Name	Position	Number of Meetings
1. Mr. Somnuk Chaidejsuriya	Chairman of the Committee	2/2
2. Mr. Phairuch Mekarporn	Member of the Committee	2/2
3. Mrs. Payao Marittanaporn	Member of the Committee	2/2
4. Mr. Hideo Matsumoto	Member of the Committee	2/2
5. Ms. Walainut Trivisvavet	Member of the Committee and Secretary to the Committee	2/2

## Board Performance Assessment

The Company prescribes in the corporate governance policy and the good corporate governance principle that the Board of Directors has to perform annual self-assessment to ensure the efficiency of corporate governance. Hence, the board performance assessment is required to carry out at least once a year in order to consider the operational results and improve further. There are two types of assessments are as follows:



**Self-assessment**  
Avg. Evaluated Score

**3.84%**



**Entire Board-assessment**  
Avg. Evaluated Score

**3.84%**

## Management Guidelines

### 1. Organization Management Based on the Principles of Good Corporate Governance

The Company conducts business under good corporate governance principles continuously in accordance with sustainability. Therefore, the Board of Directors, executives, and employees adhere to comply with the law, rules and regulations related to business operations and good corporate governance are in line with the guidelines of the Stock Exchange of Thailand and the Office of the Securities and Exchange Commission.

### 2. Establish Policies, Codes of Conduct and Guidelines for Executives and Employees

The Company has established policies and guidelines for directors, executives and employees in written form in the Corporate Governance and Code of Conduct Handbook, and requires to continuously review to achieve good corporate governance in accordance with current laws and business practices.

### 3. Internal Control

The Board of Directors has appointed an Audit Committee to oversee the internal control system by organizing an internal audit division cooperates with independent internal auditors to responsible for the developing and reviewing the efficiency and sufficiency of the internal control system, reporting to the Audit Committee and disclose the report in the Annual Report.

### 4. Risk Management and Corporate Governance

The Board of Directors has appointed the Risk Management and Corporate Governance Committee to oversee the compliance with the good corporate governance principles and the Company's risk management system related to the vision, goals, strategies, finance, production and operations, by considering the severity impacts likelihood arising, defining measures and responsible persons, including measures for report and evaluation by appoint risk management officer to present the working plan to the Risk Management and Corporate Governance Committee on a regular basis and quarterly report to the Board of Directors.

### 5. Ensure Disclosure and Financial Integrity

The Company realizes the correct disclosure information in accordance with the requirements of the regulators. In addition, various disclosure channels are in place for all stakeholders to easily access information, cooperation between directors, executives and employees is provided to realize the importance of information disclosure and operational transparency.

### 6. Continuous Awareness and Comprehension

The Board of Directors has appointed the Risk Management and Corporate Governance Committee to supervise business operations in accordance with the good corporate governance principles and code of conduct, supporting and building to understand of these principles in order to lead the correct action, including responsible for receiving complaints and assessing the ethics of the executives and employees on a regular basis.

## Code of Conduct

The Company has established the Corporate Governance and Code of Conduct Handbook as part of the Good Corporate Governance principles, using as a guideline in business operation, which transparency and fairness, against corruption, not create a conflict of interest, respect human rights and responsible for stakeholders which disclosed on the Company's website: <https://www.ttwplc.com/storage/cg/cg/files/20200513-ttw-cg-code-of-ethics-th.pdf>

## Conflict of Interest

1. All executives and employees should avoid the conflict between personal interests and the Company interest in dealing with business partners and others.
2. Executives and employees shall not disclose the Company confidential information to others during the course of the Company's employment or leaving without the proper authorization of the Company.

3. Executives or employees acting as directors or advisors in other organizations, whether acting on behalf of the company or not, must not be conflict with the interests and direct performance of their duties, as well as must be approved by the Company in accordance with the company's regulations.
4. In the event that executives or employees and family members become shareholders in any business that may have conflict of interest with the Company, the Company must be notified in written form.
5. In the event that conflict of interest arising without the intention of executives or employees and related persons, if the person becomes aware that he or she is in the situation, immediately notify the hierarchical supervisor of the incident for further corrective action.

3. Do not act in any manner indicating the intention of corruption, giving or accepting bribes to persons involved in the Company group in which they are responsible, directly or indirectly, in order to obtain benefits to the organization, themselves, or related persons.
4. Do not ignore when witnessing acts of corruption involving the Company and its group companies, it is considered a duty to notify the supervisor or the person in charge and cooperate in investigating various facts.
5. Pay or give valuable items or services such as entertainment gifts, or tourisms for government officials, foreign government officials, or staff of international organizations, either directly or indirectly, in order for that person to act or refrain from doing anything, which is an illegal act which is extremely unreasonable, this include do not encourage or involve other people in doing so. In 2020, the Company has not encountered any corruption incidents.

## Anti-Corruption

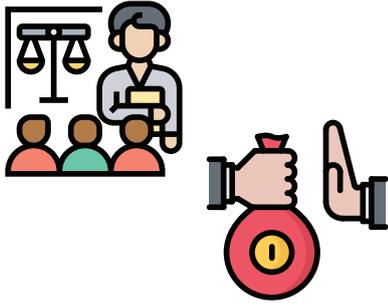


The Company is committed to complying with anti-corruption laws in accordance with the Organic Act on Counter Corruption (No.3) B.E. 2558 (2015) with additional provisions of Section 123/5, which prescribe liability for persons bribe government officials, company personnel at all level, and the company group, this includes employees, representatives, affiliates or any person acting on behalf of the entity, regardless of whether there is authority or not, must follow the guidelines are as follows:

1. Compliance with anti-corruption policy, anti-bribery, code of conduct, including the rules and regulations of the company without being involved in any form of corruption, whether directly or indirectly.
2. Perform duties with transparency as well as preparing for the performance audit of the Company or the Company group or related agencies.

The Company has established the Corporate Governance and Code of Conduct Handbook to be the correct practice for the Board of Directors, executives and employees at all levels, as well as revised to improve the corporate governance performance to meet the standards by the working group, found that the good governance principles are suitable for the current situation. In addition, comments and suggestions from Risk Management and Corporate Governance Committee were also received in order to determine the Company's good corporate governance on anti-corruption in accordance with the government's policy, which attaches importance and seriously to reduce the problem of corruption in the country.

The Company has promoted knowledge on compliance with good governance principles by providing training course both inside and outside the organization with emphasis on raising awareness of employees. Established Corporate Governance and Code of Conduct Handbook as a guideline for the Company's operations, the content is included as one topic in the orientation of new employees, including the promotion of current personnel, as well as communication through email and published on the company's website in the Good Governance section.



## Receiving Complaint & Clues

The Company provides the communication channels for employees or stakeholders of all sectors to communicate in expressing their opinions, including whistleblowing or unfair due to unlawful acts or the Company's ethics as well as complaints in the matter that may cause damage to the Company by submit the information in written form to the Audit Committee or the Board of Directors through the following channels:

### Communication of Good Corporate Governance Principles

To create awareness and understanding of the Company's business operations under the principles of good corporate governance, therefore the Company has continuously communicated and provided training course about policies, practices, and anti-corruption, by publishing the articles through the communication system within the organization such as email, publicity board, and through various activities. In addition, employees at all levels will receive a lecture on anti-corruption practices in the orientation of new employees.



**Post:**

To Corporate Affairs Department,  
TTW Public Company Limited,  
30/130 Moo 12 Buddha Monthon  
Sai 5 Road, Raikhing, Sampran,  
Nakhon Pathom 73210



**Email:**

cg@ttwplc.com



**Phone:**

(+622) 019-9490-3,  
(+622) 019-9484-9  
Cont. 1103, 1106

In this regard, questions, complaints and suggestions will be forwarded to the relevant departments to act in order to revise, improve and summarize the results for further reporting to the Audit Committee and the Board of Directors.

In 2020, the Board of Directors has not received any complaints related to non-compliance with rules and business ethics of the Board of Directors and employees. The details of corporate governance report are disclosed in the Annual Report "Corporate Governance Structure"

### 2020 Corporate Governance Performance

Performance	Details
	Adhere to the principles of good corporate governance for listed companies in 2017 (CG Code).
	Adhere to the guidelines for compliance with the Company's Good Corporate Governance manual and Code of Conduct which published in written form for the directors, executive and employees.
	Appoint the Risk Management and Corporate Governance Committee to consider and approve, promote as well as supervise policies, strategies, goals, practices and plans for corporate governance and good corporate governance then propose to the Board of Directors.
Excellence	TTW was ranked CG Score for the year 2020 from the Corporate Governance Report of Thai Listed Company (CGR) by the Thai Institute of Directors Association's assessment.



# Risk Management and Business Continuity

The Company regards to risk management in all operational processes throughout the organization, from strategic planning, new operations and investments as well as raising awareness and efficiency in risk management in order to create value for the organization and its stakeholders by annual critical risk assessment in order to enable the organization adjust to the fluctuation and various risk factors which are complexity and severity.

## Risk Management

### Operating Policy

1. The Company has established a risk assessment for each department as well as measures for employees who own the risk to reduce or eliminate those risks if it cannot be eliminated, the risk may be reduced to the acceptable level with indicators set for various risks.
2. The Company has a participation policy in the department's risk in which they are responsible, the Company will provide training course and knowledge development to employees at all levels.
3. The Company annually assesses risks assessments at various levels or may be set up as a special agenda in order to catch up with the current situation and solve any problems are arising in a timely manner.

## Risk Management

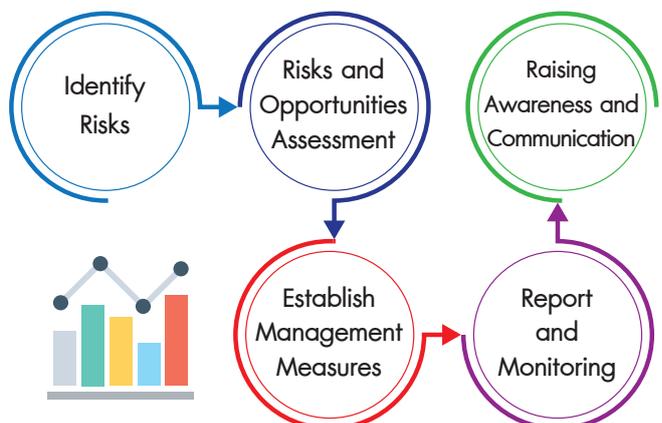
Throughout the period of operation, the Company has applied the risk management framework within the organization by applying the international standard COSO ERM 2017 as management guidelines, with objective is to prevent and mitigate the risks that may cause the organization fail to achieve the objectives, to increase stakeholder's confidence that the Company able to operate business under the currently rapid change, in conditions by the Board of Directors, executives, employees, and joint ventures company are involved in

a standardized risk management system as well as the strategic planning process, along with environmental stewardship and social responsibility, is carried out by the Risk Management and Corporate Governance Committee in order to achieve goals according to the risk management structure.

## Risk Management Structure

The management is responsible for driving various operational plans able to be executed and be successful, each department must submit operational plans and quarterly report to the Risk Management Officer (RMO) and summarize the minutes quarterly reporting to the Risk Management and Corporate Governance Committee, then the Chairman of the Risk Management and Corporate Governance Committee quarterly report to the Board of Directors, in case of changing politics, economic and society, the Company has constantly reviewing itself in order to add value to the Company and all stakeholders as well as changes and various risk factors which are more complexity and seriousness. The Company has established a risk management structure which is disclosed in page 15 and Risk Management and Corporate Governance Committee consists of 5 members according to page 34.

The Company's risk management team chaired by the Managing Director to define the structure and responsible for considering and approving policies, strategies, risk management framework, and plan as well as review and monitor throughout the organization. The Company has established risk management processes in five steps are as follows:



In 2020, the Company has reviewed the corporate risk register and adjusts risk arising from both the internal and external environment in order to be current due to the events are constantly changing. The Company manages corporate risk in accordance with the risk management framework and various strategies in order to make the risk in each matter from very high to less in an acceptable level, divided into three aspects which consist of 1) Economic risk 2) Social and environmental risks 3) Emerging Risk with establishing a risk register consists of risk lists, risk control measures, and continuously monitor the results of the risk management implementation plan. The Company has specified the organization's risk management in accordance with the following table:

## Corporate Risk Management

### 1. Economic Risk

Risks	Issues	Risk Mitigation Measures
1. Strategic Risk	The distribution of tap water is not in accordance with the Company's plan	<ul style="list-style-type: none"> <li>• Support PWA to increase tap water sales to potential areas or expanded service area in the service area under the contract</li> <li>• Monitoring the movement of other distributors, both public and private sectors, that may affect the amount of Company's tap water both present and future</li> <li>• Monitoring wastewater management in the service area of the company</li> <li>• Monitor and analyze the malfunction of the company's tap water distribution</li> <li>• Manage management of machinery, main equipment and electrical systems, as well as determining solutions and preventive measures</li> </ul>
2. Financial Risk	Additional business in water energy and environment	<ul style="list-style-type: none"> <li>• Monitoring news and business movements related to the company, both domestic and international, as well as changing government laws</li> <li>• Study and develop public utility investment projects according to government investment policies and plans, and seek for business partners</li> </ul>

### 2. Social and Environmental Risks

Risks	Issues	Risk Mitigation Measures
1. Personnel Risk	<ul style="list-style-type: none"> <li>• HR management to support the Company's business expansion</li> <li>• Risk of human rights violation</li> </ul>	<ul style="list-style-type: none"> <li>• Develop knowledge and compensation plans for high-potential employees to be different from general employees</li> <li>• Comply with safety, occupational health and working environment laws for employees and contractors</li> <li>• Evaluate ESG with key business partners</li> <li>• Communicate to customers and communities before maintenance is closed and resume operations</li> <li>• Mechanism complaints receiving from customers and guarantee damage from the Company's operations</li> </ul>

Risks	Issues	Risk Mitigation Measures
2. Communities Risks	<ul style="list-style-type: none"> <li>Complaints from communities affected by the Company's business operations</li> </ul>	<ul style="list-style-type: none"> <li>Communities visit for listening to suggestions and needs</li> <li>Establish a social responsibility project with the community</li> </ul>
3. Environmental Risks	<ul style="list-style-type: none"> <li>Raw water in the Tha Chin and Chao Phraya rivers is of low quality and insufficient quantity</li> <li>Chlorine leaks in the process of chlorine transportation or dosing, resulting to workers and nearby communities inhalation hazards</li> <li>Sludge from the tap water production process affect the community and environment</li> </ul>	<ul style="list-style-type: none"> <li>Protect and maintain raw water sources with relevant government and private agencies</li> <li>Wastewater is brought in to the new tap water producing process</li> <li>Control the transportation and distribution of chlorine in accordance with safety measures and required laws</li> <li>Dispose of waste according to the regulations of the Department of Industrial Works</li> <li>The product obtained from the waste research (Sludge) are taken advantage to the society</li> </ul>

### 3. Emerging risks

Risks	Issues	Risk Mitigation Measures
1. Risks of Climate Change	<ul style="list-style-type: none"> <li>The flood or drought in the service area affected the production and distribution of tap water below the specified target</li> </ul>	<ul style="list-style-type: none"> <li>Monitoring news and coordinate with the relevant departments closely such as Department of Water Resources, Regional Irrigation Office 5, MWA, PWA, Local environmental departments</li> </ul>
2. Risk from Changes in Relevant Laws	<ul style="list-style-type: none"> <li>The Water Resources Act, which has collected raw water costs by the Department of Water Resources resulting to increasing in production tap water cost</li> </ul>	<ul style="list-style-type: none"> <li>Closely monitoring the collect of raw water costs from the Department of Water Resources</li> <li>Establish the Company's future business cost management plan</li> </ul>
3. Emerging Infectious Diseases Risks	<ul style="list-style-type: none"> <li>Coronavirus is an emerging pathogen; there is currently no vaccine to prevent it, affecting human behavior and consumption of goods and services</li> </ul>	<ul style="list-style-type: none"> <li>Announced the BCP plan "Measures to prevent COVID-19 infection" to be used in the operation</li> <li>Strictly adhere to the epidemic prevention measures of COVID-19</li> <li>Allocate the necessary budget and resources to prevent the spread of COVID-19 to employees and stakeholders</li> <li>Continuously communicate and publicize information about the prevention of the spread of COVID-19 to all stakeholders</li> </ul>



## Risk Management System Communication

The Company regularly communicates understanding of the risk management system to all employees from the orientation of new employees, communication via electronic mail, employees and executives meetings, as well as defining risk as one of the issues that all departments have to consider during the annual planning to ensure that employees at all levels receive thorough risk management information.

## Training

The Company provides internal training course for employees at all levels as appropriate and in line with the current situation. Therefore, the Company allocates the budget for a risk management training course in the annual work plan and sends employees to outside training for continuous development potential.

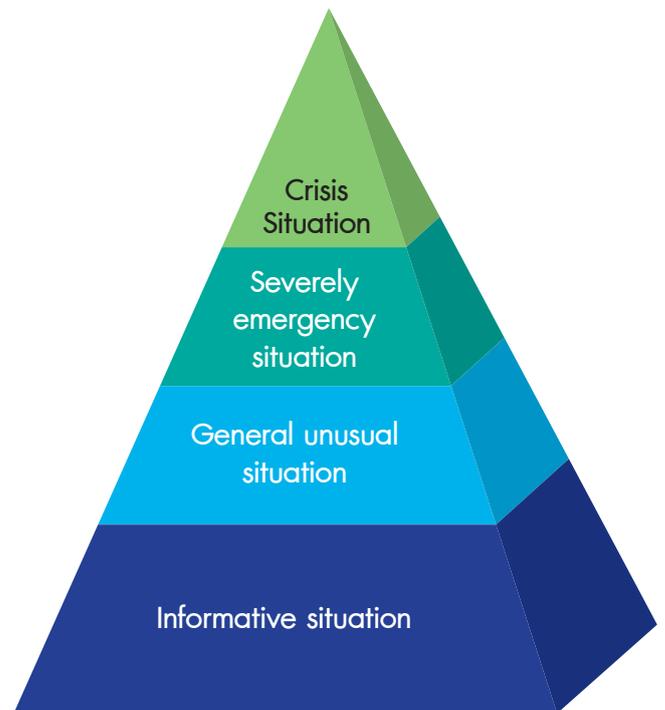
## Building Corporate Culture

The Company instills on employees to recognize the risks involved in their work and how to mitigate them with identify the level of those risk, if the risks affect the organization, it will be brought to the Risk Management Committee meeting to further define it as an organizational risk and report on the performance of those risks to be eliminated or reduced to a level Company acceptable, then the results will be submit to the Risk Management and Corporate Governance Committee and the Board of Directors, respectively.

## Business Continuity

The Company realizes the importance of the business continuity in order to not affect the organization and the stakeholders. Therefore, the Company has a risk management policy by establishing a business continuity plan to ensure that when an unexpected event occurs, the Company able recover its business quickly and minimizes any impact.

The Company establishes "Incident Management Manual" with the objectives to effectively returning operations to normal conditions under the control and responsibility according to the incident management structure with fast process and appropriate to the situation. The severity is divided into four levels are as follows:



This Incident Management Manual describes in detail the practice and control of the various situation, it will show the steps that employees must carry out when an incident occurs by focusing on the prevention of death, damage as well as control the overall situation. In 2020, there has been the epidemic of COVID-10 situation, therefore the Company managed the crisis effectively, able to operate the business normally and not affect the stakeholders.

The Company analyzes the risks from the main activities of the tap water production process that may affect the organization and stakeholders as shown in the table below:

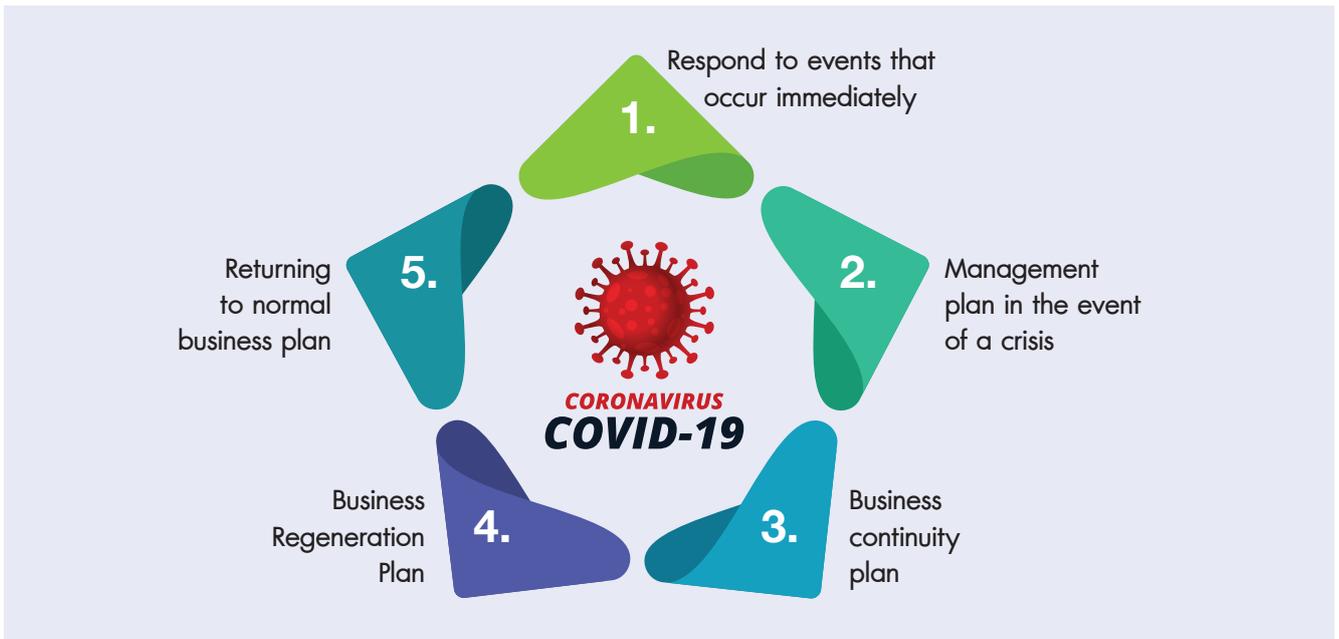
## Risks from the Main Activities of the Tap Water Production Process

Main Activity	Issues	Management
Raw Water Pumping	<ul style="list-style-type: none"> <li>Heat from the sun, fall into the water, and machine and equipment hazards</li> <li>Broken machine, and broken pipe or burst pipe</li> <li>Using electricity, lubricant, and sound machine</li> </ul>	<ul style="list-style-type: none"> <li>Training, educating and wearing personal protective equipment (PPE)</li> <li>Preventive Maintenance (PM) according to the plan</li> </ul>
Flash Mixing	<ul style="list-style-type: none"> <li>Chemical exposure, heat from the sun, fall into the water, and injury from handling of packaging</li> <li>Chemical spills contaminate water and damage the machines</li> <li>Using of electrical energy and chemical affects the environment</li> </ul>	<ul style="list-style-type: none"> <li>Training, educating and wearing personal protective equipment (PPE)</li> <li>Preventive Maintenance (PM) according to the plan</li> <li>Establish a manual handling waste or waste material</li> </ul>
Sedimentation	<ul style="list-style-type: none"> <li>Heat from the sun, fall into the water, and injuries from ropes or slings</li> <li>Broken machine</li> <li>Liquid sludge affects the environment</li> </ul>	<ul style="list-style-type: none"> <li>Training, educating and wearing personal protective equipment (PPE)</li> <li>Preventive Maintenance (PM) according to the plan</li> <li>Establish a manual handling waste or waste material</li> </ul>
Filtration	<ul style="list-style-type: none"> <li>Heat from the sun, fall into the water, and injury from a pinched or pushed sluice</li> <li>Broken of machine, filter equipment, and sand</li> <li>Sound from the water gate opens - closes</li> </ul>	<ul style="list-style-type: none"> <li>Training, educating and wearing personal protective equipment (PPE)</li> <li>Preventive Maintenance (PM) according to the plan</li> </ul>
Chlorine Mixture	<ul style="list-style-type: none"> <li>Chemical exposure, machine or equipment injury, and injury from handling of packaging</li> <li>Broken chlorine dosing system equipment</li> <li>Gases formed by chlorine</li> </ul>	<ul style="list-style-type: none"> <li>Training, educating and wearing personal protective equipment (PPE)</li> <li>Preventive Maintenance (PM) according to the plan</li> <li>Put on the Self Contained Breathing Apparatus (SCBA)</li> </ul>
Waste Management	<ul style="list-style-type: none"> <li>Waste management and crash trucks</li> <li>Broken belt press</li> <li>Using electricity, chemicals for sludge removal, and fuel from trucks</li> </ul>	<ul style="list-style-type: none"> <li>Preventive Maintenance (PM) according to the plan</li> <li>Establish a manual handling waste or waste material</li> </ul>
Transfer and Metering Pump	<ul style="list-style-type: none"> <li>The effects of noise and injury from machinery</li> <li>Broken of transfer and metering pump, broken pipe, and burst pipe</li> <li>Using electricity and sound machine</li> </ul>	<ul style="list-style-type: none"> <li>Training, educating and wearing personal protective equipment (PPE)</li> <li>Preventive Maintenance (PM) according to the plan</li> </ul>



# Crisis Management from the COVID-19 Situation

The Company realizes the importance of preventing the epidemic of COVID-19 in order to not affect the business operation and stakeholders. The Company has established five guidelines for business crisis management are as follows:



## 1. Respond to Events that Occur Immediately

- Announced the BCP (Business Continuity Plan) “Measures to Prevent COVID-19 Infection” to be used in operations.
- Improve computer programs to support work from home and online systems
- Dividing the workplace and employees into two sets
- Spray disinfect the workplace
- Separate workplaces to reduce the risk of infection
- Screening for entrants and exits to the working area
- Closely monitoring business situation and customers
- Provide employees with necessary resources.
- Provide the necessary resources to the customer



## 2. Management Plan in the Event of a Crisis

- Establish communication plans both inside and outside the organization
- Increase the rate of chlorine in tap water to maintain the remaining free chlorine content greater than 0.8 milligrams per liter.
- Follow the World Health Organization's recommendations on tap water disinfection.
- Postponing the AGM meeting from April 2020 to July 2020
- Online meetings to reduce the epidemic of COVID-19
- Reserve of chemicals used in the production of tap water increased by 20%
- Establish billing regulations and cheque to reduce touching with business partners
- Get COVID-19 insurance for employees
- Providing cost for the epidemic of COVID-19 impact

## 3. Business Continuity Plan

- Continuously monitor the quantity of tap water sold to both household, commercial and industrial customers
- Evaluate the customer's ability repay
- The issues of the epidemic COVID-19 situation were submitted to the Risk Management Committee Meeting No. 2/2020.
- The customer pays the water fee according to the actual quantity used without the minimum quantity specified in the contract. (Starting from April - June 2020)
- Extend the water bill payment period from the original specified in the contract for a period of 2 months from the date specified in the invoice without charge.

## 4. Business Regeneration Plan

- Review goals and action plan in short term (2020-2021) to be in line with the situation
- Continuously monitor the quantity of tap water sold to PWA (customer) both household, commercial and industrial customers
- Establish a project to increase the amount of tap water with customers to increase the pressure and expand the water distribution area
- Provide financial support, allocate necessary resources to stakeholders affected by the epidemic of COVID-19

## 5. Returning to Normal Business Plan

- Relocate the workplace and employees back to their original locations
- Held the AGM meeting on July 30, 2020 with the strict measures to prevent the spread of COVID-19
- Provide shareholders to authorize independent directors to attend the meeting instead of attending the meeting in person
- Provide an AGM Private live streaming system for shareholders to watch live conferences via online without meeting in person
- Evaluate the impacts to improve the Company's risk management plan to be in line with the current situation





# Supply Chain Management

Supply chain management is one of the key strategies for operating a sustainable business in order to be efficient in providing quality, timely, and economically cost-effective products or services both the budget and the using of operating resources of the company, with partner risk management and strategic purchasing and green procurement under the principle of operating with good governance principles, anti-corruption, labor care, safety society, and environment.

## Operating policy

1. The Procurement must be performed with honesty, fairness, and verifiable in order to management of supplier screening and auditing to be accurate, transparent in accordance with the good corporate governance principles, by operating with the relevant laws in screening business partners to carry out activities with the organization.
2. Procurement of goods and services must comply with the Company's Quality, Environment, Occupational Health, and Safety Policy.
3. Procurement has clear rules and procedures in accordance with the laws and regulations of society.
4. Procurement of the supplies is done in the best interest of the TTW's Company Group.
5. Supporting Green Procurement of products and services.
6. Strengthen and maintain relationships with business partners and stakeholders for the Company's business development.

## Operational Goals in 2020

### Receiving goods

Receiving goods on time as agreed with the buyer and seller or by the date specified in the purchase order, not less than

**90%**



### Control the amount of chemical reserve (Liquid alum)

#### The Bang Len Water Treatment Plant

Maximum volume control (Max)

**633.60k**

kilogram



Minimum volume control (Min)

**506.88k**

kilogram

#### The Pathum Thani Water Treatment Plan

Maximum volume control (Max)

**580.80k**

kilogram



Minimum volume control (Min)

**300.80k**

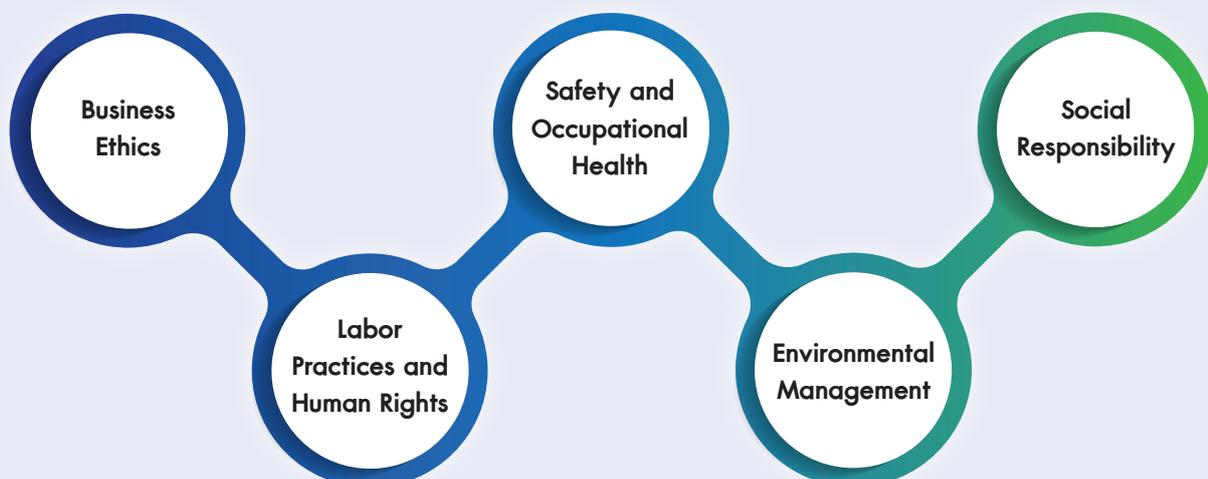
kilogram

## Supply Chain Management Strategy



## Business Partner Risk Management

The Company has established the Supplier Code of Conduct (SCOC) adheres to environmental, social and governance principles (ESG) which disclose on the Company's website <https://www.ttwplc.com/storage/about/policy/supplier-code-of-conduct.pdf> and the Business Partner Screening and Audit Policy which disclosed on the Company's website <https://www.ttwplc.com/storage/about/policy/policy-filter.pdf> in order to conduct business in a sustainable manner and to formulate anti-corruption policy for conducting business together with fairness under the principles of good governance. The business partner code of conduct divided in to five categories are as follows:



# The Process of Analyzing the Risks of the Supply Chain

## 1. Analyze key business partners

The Company defines three criteria for the analysis of key business partners are as follows:

- Business partner with a high contract volume (Classified by business partners group)
- Business partner selling raw materials, products and services those are important to the Company's business processes
- They are the few partners in the market



## 2. Risk Assessment

The Company assesses its sustainability risks for all customers in a range of critical, high, medium, and low-level risks.



## 3. Risk mitigation measures

The Company defines three aspects of risk mitigation with business partners:

Risks	Probability of Occurrence	Level	Risk Mitigation Measures	2020 Performance
<p>1. <u>Economy</u></p> <p>1.1 The business partner is the manufacturer and the agent in the Country</p> <p>1.2 The product delivery is not as expected</p>	Low	High	<ul style="list-style-type: none"> <li>• Establish a contract purchase agreement and guaranteed delay</li> </ul>	None
<p>2. <u>Social</u></p> <p>2.1 Business partners engage in child labor or illegal labor</p> <p>2.2 The business partners are required to establish a health, occupational health, and safety policy on work and sanitation.</p>	Low	High	<ul style="list-style-type: none"> <li>• Employment criteria must not be employed by child labor under the age of 15 years and must not employ all forms of forced or unwilling labor</li> <li>• The business partner working conditions must clearly define working hours, compensation, and termination</li> <li>• The business partners are required to comply with local laws and company regulations to handle emergencies.</li> <li>• The business partners are required to provide protection of health, occupational health, and safety as well as adequate and appropriate personal protection for employees</li> <li>• Employees able to propose work safety issues that are not considered contrary to discipline</li> </ul>	None
<p>3. <u>Environment</u></p> <p>Management of toxic transportation and waste disposal</p>	Low	High	<ul style="list-style-type: none"> <li>• Specify the environmental criteria of the contractor</li> <li>• Verify the license of the contractor</li> <li>• Review the employment contract with concise and secure adequate standards.</li> </ul>	None

The Company has established a supply chain management strategy that emphasizes the efficient use of resources, the production of health and environment friendly products including emphasizes on communicating sustainable social responsibility in all dimensions, including economic, social, and environmental aspects to business partners in the supply chain, as well as promotes green procurement in addition to quality, price and on-time delivery in accordance with general procurement rules to create mutual value for consumers and society as a leader in the private sector in domestic tap water production.

In 2020, the Company establishes backup plan and intensifies the delivery of products including looking for delivery channels that do not affect the production process as well as providing new sources of substitute products in the event of a crisis that the existing business partners are unable to deliver such products.

The Company regards to screening new suppliers by emphasizing the quality of work and delivery including review of partner qualification measures in various fields such as environmental management is used in the evaluation, and increasing review of the operating results throughout the year of such business partner.



The Company provides the training courses and reviews the expertise of engineering procurement officers, warehouse officers together with business partners to develop skills including product receipt and record in ERP (Enterprise Resource Planning) system, a tool for managing the organization's database in accordance with the regulations. In 2020, there is a business partner online meeting and cancel the visiting comply with the situation to prevent the spread of COVID-19 but emphasized the business partners send professionals receiving the training course at the Company instead with four related training courses are as follows:

1. Internal energy management audit
2. Building an awareness of energy conservation and energy saving guidelines within the building
3. Operation and maintenance of PLC (Programmable Logic Control) system
4. Installation and setup in SCADA (Supervisory Control and Data Acquisition) programming





## Performance in 2020

Target Results	Goals	Result (%)
Receiving goods on time as agreed with the buyer and seller or by the date specified in the purchase order	Not less than 90%	96
Control the amount of liquid alum reserve (Chemical) to be in the (Max) and (Min) as specified The Banglen Water Treatment Plant	633,600 Kilogram	100
<ul style="list-style-type: none"> <li>• Maximum volume control (Max)</li> <li>• Minimum volume control (Min)</li> </ul>	506,880 Kilogram	100
The Pathum Thani Water Treatment Plant	580,800 Kilogram	100
<ul style="list-style-type: none"> <li>• Maximum volume control (Max)</li> <li>• Minimum volume control (Min)</li> </ul>	300,800 Kilogram	100

Business Partner List	2019	2020	Increase / Decrease (%)
All Business Partner	1,036 partners	1,125 partners	Increase 8.59%
General Partner	774 partners	954 partners	Increase 23.25%
Major Partner	262 partners	171 partners	Decrease 34.73%
Domestic Partner	1,036 partners	1,125 partners	Increase 8.59%
Overseas Partner	0 partners	0 partners	None
Old Partner	929 partners	1,036 partners	Increase 11.52%
New Partner	107 partners	89 partners	Decrease 16.82%
Domestic Partner			
<ul style="list-style-type: none"> <li>• Bangkok</li> <li>• Business areas (Nakhon Pathom, Samut Sakhon, Pathum Thani, Ayutthaya, Rayong, and Chonburi)</li> <li>• Other areas</li> </ul>	391 partners	438 partners	Increase 12.02%
	157 partners	176 partners	Increase 12.10%
	488 partners	511 partners	Increase 4.71%

Other Performance	2019	2020	Increase / Decrease (%)
Cost of purchasing chemicals	100,412,916.40 baht	102,589,855 baht	Increase 2.17%
Business partner assessment in ESG	15 partners	20 partners	Increase 33.33%
Disputes between the Company and its subsidiaries, business partners, or partners of contract	0 time	0 time	Invariable (100%)



# Products and Services Responsibility

The Company realizes the importance of producing products and services that meet the specified standards before delivering to customers in order to serve the customers' satisfactions and expectations. The company has both proactive and reactive relationship management with customers as well as building a relationship with tap water users as their customers to get the highest satisfaction by dividing tap water users into three groups which are: industrial tap water users, commercial tap water users, and household tap water users.



Provincial Waterworks Authority (PWA / Customer)



Tap Water users

## Operating Policy

The Company regards to the operation responsibility for products and services to ensure that tap water delivered to customers is "quality, sufficiency and continuity". Therefore the Company aims to operate with the standards specified in the tap water purchase contract by prescribe the policy on product and service qualities are as follows:



Quality

1. The quality and cleanliness of the tap water meet the Industrial Standard 257, Part 1-2521

100%



Sufficiency

2. Sufficient water pressure at the end of tap water distribution pipes at not less than 27 meters water

100%



Continuity

3. The continuous flow of tap water distribution is not less than

99.97%

## Performance Goals for year 2020

### Customer Satisfaction

The customers are satisfied with the Company's service not less than

90%

### Tap water distribution volume

#### TTW Public Company Limited

Tap water distribution volume not less than

168.36

million cubic meters

#### Pathum Thani Water Company Limited

Tap water distribution volume not less than

149.74

million cubic meters

# Customer Relationship Management

## 1. Providing Training Courses for Customers

- 1.1 Workshop on the usage of Portable Ultrasonic Flow Meter, Clamp On type and deliver measuring and recording liquid flow in pipes.
- 1.2 Workshop on geospatial database applications (GIS)



## 2. Information Service

### 2.1 Internal Communication

The Company communicates information on the responsibility of internal products and services by organizing a performance summary meeting to analyze and review the planned goals such as monthly meeting, quarterly meeting, Risk Management Officer Meeting (RMO), and Management Committee Meeting (MCM) to monitor and report the operating results to relevant parties for acknowledgment.

### 2.2 External Communication

The Company communicates information about tap water quality on the Company's website [www.ttwplc.com](http://www.ttwplc.com) to enable customers accessing such information quickly and easily. In addition, the company offers various forms of external communication such as hold the customers meeting according to the schedule, consultations via LINE group, contact by email, phone coordination, and informal meeting with the objectives to serve the customers' needs and satisfaction, as well as achieving integrated collaboration goals.

## 3. Customer Satisfaction Survey

The Company annually surveys the customer satisfaction specifying the survey frequency twice a year, during June and December of each year. The results of the customer satisfaction survey were analyzed and presented to the executives to consider improving and developing work processes in order to increase work efficiency and increase customer satisfaction.



Customer Satisfaction Survey Results Nakhon Pathom - Samut Sakhon Area, Year 2018 - 2020



Customer Satisfaction Survey Results Pathum Thani - Rangsit Area, Year 2018 - 2020

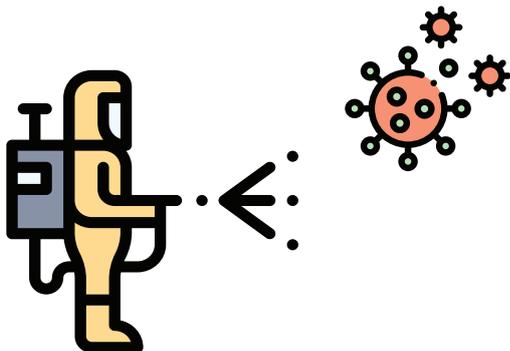
#### 4. Customer Complaints Management

The Company continually regards to customer complaints management. In 2020, there were no issues that caused any complaints from customers. In case of customer's complaints arise, the Company has a process for receive customer's complaint as the ISO 9001 system by management according to the specified measures and sending a complaint letter to the customer with a summary for the next meeting.

#### 5. The Prevention of Epidemic COVID-19 Situation for Customers

The Company prevents the epidemic of COVID-19 situation in the responsible for products and services are as follows:

- 5.1 Adjust the plan and change the meeting into an online format as well as refrain from engaging in customer relations activities until the epidemic of COVID-19 situation is resolved.
- 5.2 Deliver medical equipment to customers and closely monitor the epidemic of COVID-19 situation of customers.
- 5.3 Maintain the quality of tap water to meet the specified standards by increasing the chlorine addition rate in tap water to maintain the remaining free chlorine content greater than 0.8 milligrams per liter.
- 5.4 Comply with the World Health Organization recommendations on tap water disinfection which requires the tap water production system to add chlorine at a concentration of 0.5 milligrams per liter or more, and strictly time to touch not less than 30 minutes
- 5.5 Assisting customers affected by the epidemic of COVID-19 situation by extending the repayment period to customers.



#### 6. Customers Risk Management

The Company manages risks from customers in the issues of affecting the quantity of tap water distribution that does not comply with the Company's business plan are as follows:

- 6.1 Support the customer to increasing tap water sales to potential areas or service areas under the contract in Nakhon Pathom - Samut Sakhon and Pathum Thani - Rangsit areas.
- 6.2 Monitoring the movement of other water producers, both public and private sectors that may affect the current and future of the Company's tap water distribution.
- 6.3 Monitoring wastewater management in the Company's service area.
- 6.4 Monitoring and analyzing the malfunction of the amount Company's tap water distribution.

#### 7. Promote Use of Tap Water Activity

- 7.1 Drive Thru project for PWA, Samut Sakhon branch in the front of building area to response the risk prevention policy from COVID-19, the Drive Thru channel was constructed for the payment of tap water in order to organize and reduce congestion within the office and avoid exposure.
- 7.2 The project of laying a pressure pipe in Soi Lueang Sala to Krathum Baen phase 2, the Company collaborates with the PWA, Samut Sakhon branch, studied the project for the transfer tap water users of Rai Khing Town Municipality, Sam Phran, Nakhon Pathom, it was found that 3,328 households used groundwater from which faced problems of water quality not meet the Department of Health's standards. The project is an opportunity to increase the Company's tap water distribution, supporting government policies to provide people with clean drinking water and promote good sanitation. The project is currently under feasibility studies and is expected to begin in 2021.

#### 8. Customer Relations Activities

The Company held customers relations activities annually on a regular basis such as giving scholarships to customers' children, organize office merit-making for customers of all branches, held off-site meeting, and others in order to encourage and support the customers' work to be more efficient.

# Performance in 2020

Target Results	Goals	Performance	Percentage
The customers are satisfied with the Company's service	Not less than 90%	96%	106.67
TTW Public Company Limited Tap water distribution volume	Not less than 168.36 million cubic meters	165.85 million cubic meters	98.40
Pathum Thani Water Company Limited Tap water distribution volume	Not less than 149.74 million cubic meters	153.12 million cubic meters	102.28

## There are "Customers" There is "TTW"





# Innovation and Technology

Currently, the innovation is important to business development and operation in order to increase competitiveness and create sustainability for the organization. The company realizes the importance of business innovation development in line with corporate values, as well as developing the Kaizen project and improving working conditions in order to promote a learning environment and innovation of technology both the development of research support processes and support for technology and working tools.

## Operating Policy

### 1. Corporate Values

Running business to fulfill our vision and mission on the basis of sharing highest satisfaction and benefits among stakeholders by means of:

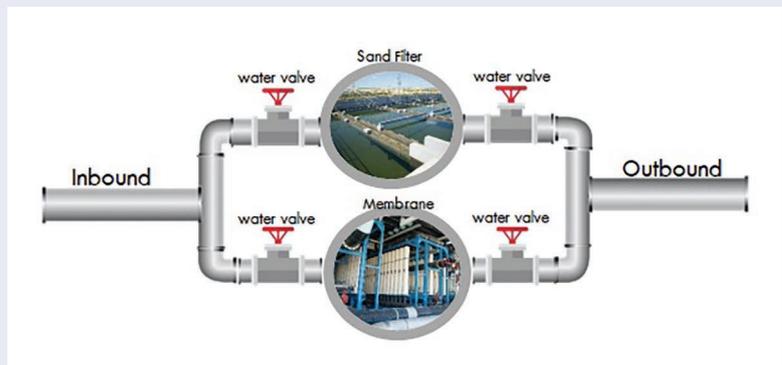
- Continuous Improvement
- Proactive & Initiative
- Teamwork

### 2. Sustainable Development Policy

The Company's innovation promotion is stated in the Sustainable Development Policy no. 6 "Promote development and creation of innovation for business and society"

### 2. Innovation

The Company invents an innovative manufacturing process that incorporates Conventional technology with Ultra Filtration Membrane (UF) technology, thus becoming "Hybrid Technology" at Krathum Baen Water Treatment Plant, the largest commercial tap water production plant in Thailand and the only tap water treatment plant to use hybrid filtration. The Company's tap water treatment plant is located near the service area with heavy tap water users in Krathum Baen, Samut Sakhon Province, this can reduce electricity costs by reducing the distance of pumping water approximately 40 kilometers and reducing the cost of chemicals in the production process. The Company is able to manage the seasonal fluctuation of raw water quality while keeping production costs low, as well as serve the continually increasing demand for tap water in both the household, commercial and industrial sectors.



## Innovation and Technology Operations

### 1. Technology

The Company uses Membrane technology, which is the internationally accepted standard of tap water production technology in the water production process at Krathum Baen Water Treatment Plant, Samut Sakhon, it uses Ultra Filtration (UF) system and Membrane technology to separate suspended solids or dissolved solids from liquids by pumping raw water through a membrane with openings (Pore Size) only 0.01 microns which can effectively remove contaminants, germs, viruses and bacteria, resulting in tap water quality is cleaner and safer, as well as reducing the use of chemicals in the production process. Membrane are a world-class standard technology, similar to use in the US, Singapore, and European Union. It can be considered that the Krathum Baen Water Treatment Plant is the largest commercial tap water production in Thailand that has chosen Ultra Filtration (UF), which serves the demand for tap water of industrial, commercial, and household sectors with full efficiency.

## Innovation and Technology Management

1. Promote both internal and external training for operational employees as well as sharing experiences through Kaizen or Exchange Program and work visits between departments to develop their skills, knowledge and increase work efficiency.
2. Organize a Kaizen contest by promoting employees of all levels to participate in activities where employees able to develop innovative ideas and present their work both individually and groups. In 2020, there were 363 Kaizen contributions created by employees.
3. Presenting work to employees and executives, any work can be used to improve the work process and the results have been tested, the Company will actually use in work.
4. Establish a “Kaizen Committee” to provide guidance to employees on innovation within the organization, in addition to supervisors who provide basic advice to employees.
5. Open communication within the organization about the work created by employees in order to convey and disseminate knowledge to employees for the best benefit.
6. Giving emphasis on developing employee skills without adhering to the success of innovation, even if the work is not awarded in both internal and external contests.
7. The information of all employees that has been presented is systematically collected and the results that have been summarized are put into practice in the work.



## Kaizen Examples

### 1. Flow Sludge Project

Running the sludge press system cannot increase the Flow Sludge Belt Press, due to the pipeline conveying sludge from Mixing Tank to Belt Press, there is no slope down to Belt and often has sludge clogged in the pipe, resulting in sludge drainage and sludge overflow from Mixing Tank.

Therefore, improvements were made by designing the slope receiving sludge from the Mixing tank and improved to be an open track instead of a pipe, resulting in increasing the amount of sludge entering the Belt Press system and reducing the cleaning of the work area due to sludge overflow from the Mixing tank.



## A Performance Comparison Before - After

Details	Before	After	Increase/Decrease (%)
Capacity of sludge	5 cubic meter / hour	15 cubic meter / hour	Increase 200%
Reduce cleaning in the work area	3 times / week	None	Decrease 100%
Reduce the cost of electricity consumption	70,954 baht / month	23,651 baht / month	Decrease 66.67%

### 2. Sludge Injection Equipment Project

Currently, the tap water treatment plant is an open system, resulting to dust flying in the air accumulating on the surface of the Sand Filter Tank, and cause deposits to accumulate on the walls of the sand filter tank. The workers require using the water hose and bow the head, which is to clean, it takes a long time and may cause a hazard during the operation. Therefore, the Company invented a device for injecting sludge and sand deposits on the filter tank resulting to the number of workers, operation time and risks were reduced.



## A Performance Comparison Before - After

Details	Before	After	Increase/Decrease (%)
Cleaning time	30 minutes	10 minutes	Decrease 200%
Number of workers	2 persons	1 person	Decrease 50%
Risk from the head hitting or falling into the sand filter tank.	High	Low	Decrease 70%



# Quality of Life



## Employee Stewardship and Development

### The Importance of Employees

The Company regards its employees driving the organization to success, therefore manpower planning is in line with the business strategy by developing capability and potential employees including recruiting external personnel join the Company based on those who are both “Good and Talent people”, adhering the ethical principles, it does not discriminate on race, religion, skin color, gender or physical disabilities considering by knowledge suitability, ability, and behavior. The employment must be in accordance with the law, and defines the employees’ stewardship and development goals are as follows:

**1** Manpower with sufficient potential for business operations

**2** Fully fairness with the Commissioning system, performance management, and compensation

**3** Being leading organization that the new generation purpose to work with



## Operating Guidelines



- 1 Develop personnel knowledge and competence thoroughly and consistently



- 2 Fair compensation and benefits compared to other leading companies



- 3 Strictly comply with all laws and regulations applicable to employees



- 4 The workplace environment is safe in accordance with the principles of occupational health and conducive to work



- 5 Appoint, transfer, reward and punish employees with equality, honesty, and fairness based on the knowledge, abilities and suitability of the employees



- 6 Listen to opinions and suggestions based on the professional knowledge of employees



- 7 Treat employees with respect to individuality and human dignity



- 8 Avoid unfair conduct that affects the employee's job security, threatens, or puts pressure on the employee's mental state



- 9 The employees able to compliant in case of unfairness in accordance with the established systems and processes

## Performance Goals for year 2020

1. The rate of successful employment according to the plan is not less than

80%

2. Employee turnover rate not more than

4%

3. Result of employee satisfaction assessment for working not less than

80%

4. Provide training course according to the Company's safety training plan

100%

# Employment and Human Right

The Company recognizes human rights issues that may affect business operations throughout the value chain involving stakeholders. Therefore, the Company establishes a Human Rights and Labor Policy in accordance with the UN Global Compact, Universal Declaration of Human Rights (UDHR), United Nations Guiding Principles on Business and Human Rights (UNGP) as the guideline and the operating framework of the company in order to building confidence to conduct business that respects human rights by defining guidelines for the Board of Directors, the executives and employees which are disclosed in the Company's website <http://www.ttwplc.com/storage/about/policy/policy-human.pdf> The Company defines the goals of human right performance are as follows:



1 An organization model respecting human rights by encouraging and promoting in the business value chain



2 No human rights violations both inside and outside the Company

The Company has extended the human rights due diligence processes to business partners through Code of Conduct (SCOC) in labor and human rights section, occupational health and safety section, and environmental section.

From this assessment, it was found that there was no human rights risk identified in the Company's operations. Even then, the Company defines guidelines for prevention and mitigation of human rights risks are as follows:

## 1. Employees Right

Risk Issues	Impact	Guideline to Protect and Reduce Impact on Human Rights Risk
Occupational Health and Safety	<ul style="list-style-type: none"> <li>Rights to good quality of life</li> <li>Rights to work</li> </ul>	<p><b>Safety</b></p> <ul style="list-style-type: none"> <li>Provide work safety training course on hazardous chemicals, personal protective equipment as well as building environmental awareness, worker in confined space, review of the work on cranes etc.</li> <li>Practice, review and safe chlorine handling as well as using of an Emergency Kit-B</li> <li>Manage emergency plan in the event of severe chlorine leakage</li> <li>Provide a chlorine vapors and leakage protection equipment</li> </ul> <p><b>Occupational health</b></p> <ul style="list-style-type: none"> <li>Provide employees annual health check-up at all levels</li> <li>Provide a special health check-up for workers in high-risk areas and employees aged 35 years and over</li> <li>Group insurance against COVID-19 infection is available for employees of all levels</li> </ul>

## 2. Customer Rights

Risk Issues	Impact	Guideline to Protect and Reduce Impact on Human Rights Risk
Occupational Health and Safety	<ul style="list-style-type: none"> <li>Rights to good quality of life</li> </ul>	<p><b>Communication and Safety</b></p> <ul style="list-style-type: none"> <li>There is communication and publicity regarding safety in the workplace</li> <li>There is a process for screening business partners in accordance with legal requirements</li> </ul>

Risk Issues	Impact	Guideline to Protect and Reduce Impact on Human Rights Risk
Protection of rights and personal information	<ul style="list-style-type: none"> <li>• Right to equality</li> <li>• The right to be protected by law</li> <li>• Privacy rights</li> </ul>	<b>Protection of customer rights</b> <ul style="list-style-type: none"> <li>• There is a process for accepting customers complains</li> <li>• Warranty for the damages from the company's operations to customers according to the agreement</li> </ul> <b>Personal information</b> <ul style="list-style-type: none"> <li>• Protect customer's personal information and not distributing it to third parties</li> </ul>

### 3. Community Rights

Risk Issues	Impact	Guideline to Protect and Reduce Impact on Human Rights Risk
Environment and living safety from the Company's business operations	<ul style="list-style-type: none"> <li>• The right to be protected by law</li> <li>• Freedom of expression</li> <li>• Rights to good quality of life</li> </ul>	<b>Environmental</b> <ul style="list-style-type: none"> <li>• Operate in accordance with ISO 14001 standard</li> <li>• Strictly manage the waste (sludge) in accordance with the requirements of the Department of Industrial Works</li> <li>• Cooperation for protect natural water sources</li> </ul> <b>Safety</b> <ul style="list-style-type: none"> <li>• Communication in advance before maintenance of water pipes</li> <li>• Survey of needs and provide complaint channel</li> <li>• Establish remedial measures if affected by the Company's operation</li> </ul>

### 4. Contractor Rights

Risk Issues	Impact	Guideline to Protect and Reduce Impact on Human Rights Risk
Safety	<ul style="list-style-type: none"> <li>• The right to be protected by law</li> <li>• Rights to good quality of life</li> </ul>	<ul style="list-style-type: none"> <li>• Comply with the laws regarding safety, occupational health and working environment, including the company's policy on Occupational Health and Safety</li> <li>• Provide training and ensure compliance with work safety regulations</li> <li>• Procure basic personal protective equipment appropriate to work risk to preserve occupational health</li> </ul>

## Collective Bargaining

The Company provides communication between executives and employees in collective bargaining of employee benefits through the Welfare Committee, Human Resources and Administration Department. The meeting is regularly held, reflecting to support the rights to work consistent with Universal Declaration of Human Rights (UNGP) to develop employees' welfare and benefits of together with management representatives, resulting employees receive expectations welfare that meets their needs and appropriately.

The Company provides complaints channel regarding human rights, for issues that violate legal ethics both from employees and stakeholders, there is a mechanism to protect employees and those who report the clues by creating a secret database system able accessed by relevant parties. A committee will be appointed to handle the case, committee members include representatives from different departments who have no vested interest in the cases to investigation proceeds in line with the regulations and will report results to those who filed the complaint. Channels of receiving complaints and clues are as follows:

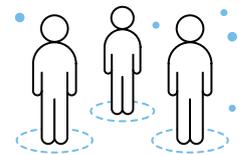
Post	Email	Phone
 <p>To Corporate Affairs Department TTW Public Company Limited 30/130 Moo 12 Buddha Monthon Sai 5 Road Raikhing, Sampran, Nakhon Pathom 73210</p>	 <p>cg@ttwplc.com</p>	 <p>(+662) 019-9490-3 (+662) 019-9484-9 Cont. 1103, 1106</p>

## Employee Engagement Support

The Company becoming to the national organization, partly from personnel who are committed to their work which through taking care by the organization from the beginning until the retirement day. The Company has established employee welfare policy to subsidiaries and associated companies with more benefits than prescribe by legal such as establishment of a provident fund by paying the Company's contributions at an appropriate rate over the working age of between 5 - 10%, annual health check-up, free medical treatment according to the health insurance scheme, maintaining the workplace environment by establishing safety and hygiene policies, provide vehicles for employees during their operations, and provide a company car for the executives to facilitate in the work of employees of all levels

In 2020, there was an epidemic of COVID-19 outbreak, the Company is concerned about the employees' health. Thus provides measures to prevent by distribution of face masks, hand sanitizing gel, temperature check before entering the workplace, separate the working area, monthly spray disinfection in the workplace, and distribute the equipment to employees in the event that work outside, provide food container using for packing food in order to hygiene and in accordance with government measures on social distancing as well as insurance from COVID-19 for all employees.

In addition, the Company promotes various activities that benefit employees such as establishment of walking club, badminton club, and football club. The Company conducted an Employee Satisfaction Survey, Employee Engagement Survey including employee participation in welfare management, occupational health and safety through the Occupational Safety and Health Committee. In 2020, the Employee Engagement Survey results were 78% of the number of employees who completed the survey was 305 peoples or 98% of the employees who had the right to fill out the form (With a working period of 6 months onwards). The survey results increase from the previous year, therefore, the Company will survey results to develop and improve the 2021 employee stewardship plan.



## Saving and Investment Support

The Company participated in the Retirement Readiness Index project of Faculty of Commerce and Accountancy, Chulalongkorn University for the employees to inform employees about their readiness for retirement and listen to knowledge of saving and investing for retirement. Retirement Readiness Index is a tool and benchmark for measuring retirement readiness and raising awareness of the importance of saving, efficient financial planning for employees as well as it is also an index that focuses on the holistic assessment of retirement readiness, taking into account both financial and health and well-being factors.

## Employee Development



The Company regarded human resource development in terms of professional skills, focusing on Functional and Technical Competency through the Learning Center in the tap water production line covering the business area to support the development of in-depth personnel skills in the Company's important businesses, including the development of leadership for executives and employees in each business area to have more knowledge and management ability in the responsible line.

The Company promotes and develops the executives' capacity and employees able to perform their work efficiently, responding to the Company's strategies and goals with maximum efficiency. The Company therefore establishes a human resource development framework for each department, which is shown in the following chart:

 <b>Organization Level</b>	<ol style="list-style-type: none"> <li>1. Corporate Culture Program</li> <li>2. Management Program</li> <li>3. Leadership/Supervisor Program</li> </ol>
 <b>Individual Level</b>	<ol style="list-style-type: none"> <li>1. Functional Training</li> <li>2. Related Training</li> <li>3. Enable Training</li> </ol>
 <b>Primary Level</b>	<ol style="list-style-type: none"> <li>1. Quality Concept and Standard</li> <li>2. Safety and Health</li> <li>3. Environment</li> </ol>

In 2020, there were 3,177 training hours, decrease from 2019 at 29.40%. Due to the epidemic of COVID-19 situation in 2020, the Company therefore provides training course that are important and necessary for the work, mainly by on-site training.

## Performance in 2020

Target Results	2019	2020	Increase / Decrease (%)
The rate of successful employment according to the plan is not less than 80%	80%	92%	Increase 15%
Employee turnover rate not more than 4%	0.37%	0.18%	Decrease 45.95%
Result of employee satisfaction assessment for working not less than 80%	75%	78%	Increase 4%
Provide training course according to the Company's safety training plan 100%	100%	100%	Invariable (100%)

# “Employees” are The organization’s valuable resource





# Occupational Health and Safety

Occupational Health, Safety and Security are important to the Company's operation and stakeholders consist of employees, contractors, customers, business partners and communities, thus established the Company's Quality, Environment, Occupational Health, and Safety Policy disclosed on the Company's website <https://www.twplc.com/storage/about/policy/policy-environment.pdf>, by prescribed employees and stakeholders responsible for both themselves and their associates according to the established laws and standards. In addition, the Company performed in accordance with the international standard ISO 14001.

## Performance Goals for year 2020

1. Zero of Injury & Illness Free Operation

0

2. Practice emergency plans at least once a year

1

## Occupational Health and Safety Strategy



1 Building occupational health and safety standards for employees at all levels



2 Increase the potential and awareness of work safety



3 Strictly comply with the laws and regulations applicable to employees

## Occupational Health and Safety Operations

The Company appoints the Occupational Health, Safety and Environment Committee, responsible for considering the policy, operation plan, and occupational safety training plan to prevent and reduce the occurrence of accidents or problems caused by work, report and suggest measures or solutions to correct the laws related to occupational safety and work safety standards to the executives in order to safety for employees, contractors and third parties who come to the Company area including a survey of safety in the workplace, verify the accident statistics, set up an unsafe work reporting system to be the duty of all employees at all levels.

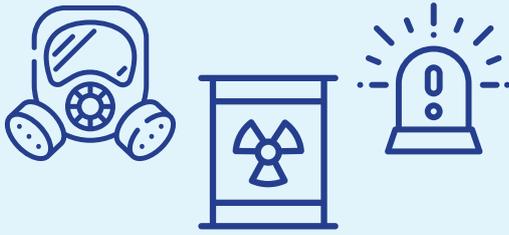
The Company uses safety principles as a criterion for all stakeholders to strictly abide by in addition to complying with the specified laws. Therefore, the Company established a framework for operating safety, occupational health and working

environment in written form as well as applying international standards in the Company's ethical which defines the criteria for implementation and guidelines for operational excellence covering safety practices, which are summarized as follows:

### 1. Safety, Occupational Health and Working Environment

1.1 Establish regulations and standards that have measures not less than laws and international standards, which employees must strictly comply with the relevant laws, policies, requirements and standards.

1.2 Safety management regarding to audit of the latest law and the status of the formerly law in order to comply with various relevant laws, review the measures of safety work supervision (Regulations and manuals), review the contingency plan for efficiency in line with actual operations, review and establish an annual safety plan reports to government agencies.



- 1.3 Examine the safety and working environment such as machine, tools and electrical systems, crane (by an external agency), vehicle safety, mobile machine, e.g. forklift, and dump truck as well as requesting for permission to work according to the specified job description, inspection of the working area, label, various safety symbols, maintenance system, fire suppression system, storage, receiving flammable and chemical materials, measure the intensity of light both day and night, measure the noise and heat in the work area, and measure the amount of dust and chemicals in the atmosphere.
- 1.4 Provide safety equipment such as various safety symbols, symbol color as well as provide personal protective equipment, e.g. safety hat, safety shoe, other personal protective equipment according to the nature of work for which permission is granted, provide emergency notification equipment, emergency suppression device, and calibration of various gas meter equipment in the work.
- 1.5 Control and prevent the various forms of loss caused by accident, fire, work-related illness, lost or damaged property, Security violation, and not working properly as well as various mistakes, provide a safe working environment, appropriate and adequate safety equipment, this include the executives and employees are required to report accidents and incidents according to the specified steps.
- 1.6 Public relations and communication about policies, regulations, procedures, methods and safety precautions to employees, contractor, and stakeholders In order to operate properly, it does not pose a danger to health, property and the environment.
- 1.7 Any operation that is unsafe or fails to comply with regulations and safety standards, temporarily stop that work and inform the relevant persons, supervisors and the responsible department for further corrections.

## 2. Requesting Permission to Work at Risk and Contractor

Requesting permission to work in the matter of safety is the matter of risk which requires verification of worker readiness, availability of equipment, tools, and machines including the readiness of the environment to be ready and secure enough before being allowed to start working by specifying the type of license are as follows:

### 2.1 General Entry Permit

For general entry operation such as cleaning, painting, and / or others that does not involve the system or the shutdown of all systems within the water production plant and the work of the contractor.

### 2.2 Hot Work Permit

For work that generates sparks such as electric welding, gas welding, and / or others where sparks or heat are generated inside the water treatment plant.

### 2.3 Shut down Electrical System Permit

For work that requires shut down the electrical system, both high voltage system and low voltage system within the water treatment plant.

### 2.4 Excavation Permit

For the work that requires drilling by drilling equipment such as hoe, and spade as well as heavy machinery such as backhoe, or drilling machine in the water treatment plant.

### 2.5 Mechanical Isolation Permit

For applications where pressure is required to cut off the pipe system and testing of various systems and pressures in the water treatment plant, consist of water, air and chemical systems.

### 2.6 Confined Space Entry Permit

For work that requires entering a confined space (According to the Ministerial Regulation prescribing administrative and management standards for occupational safety, health and working environment in confined spaces, B.E. 2547) within the water treatment plant.

### 3. Risk Assessment and Incident Investigation

The Company is aware of operational risks that can arise at any time without regular risk management and assessment systems. Therefore, the Company has assessed two types of occupational health and safety risks which are: risk of chemical spills namely chlorine, and risk from work accidents. The risk management guidelines have been defined as follows:



Occupational Health and Safety Risks	Risk management methods
Chemical spills (chlorine)	Follow the manual and strictly perform in accordance with the rules and regulations on occupational health and safety, training on working methods including chemical emergency drills according to operational plans and risk assessments on a regular basis.
Work accident	Follow the manual and strictly perform in accordance with the rules and regulations on occupational health and safety, training on working methods including drills to stop emergency from work accidents according to operational plans and risk assessments on a regular basis.

### 4. Occupational Health and Safety Services

The Company regards to the employees' good quality of life, thus providing occupational health and safety services such as annual health check-up, health insurance, life insurance, COVID-19 insurance, providing first aid equipment, hazard warning labeling including defines operating procedures and strictly supervises to provide employees with safety in terms of life and property as well as good physical and mental health as a result, the employees have the strength to work with the engagement.

### 5. Employee Participation in Occupational Health and Safety

Employee participation is a key strategy, we believe that employee participation will ensure the credibility of the organization. Enthusiasm and cooperation will result in the achievement of its intended objectives: "Zero" Injury & Illness Free Operation by creating facilitates system that continued participation in safety activities of all employees at all levels. The participation activities are as follows:

#### 5.1 Searching for the environment, circumstances and unsafe behavior of employees' activity

Measure the working environment, including light, heat, and sound as well as chemical hazards such as chemical vapors in the work area and environmental hazards, including the exhaust from electric generator, and wastewater from the toilet, etc. The measured value must not exceed the standards of the Ministry of Industry.

#### 5.2 Safety Man activity

Assign all operational employees to act as a "Safety Man", who will act as a safety officer per week. The objective is to ensure that employees are involved in taking care of safety by responsible for identify unsafe working behaviors, risk assessment, figure out the hazards prevention submit to the Occupational Safety, Health and Environment Committee and Senior Executives to adopt the meeting resolution as a guideline for further safety operations. The activity focuses on the leadership of safety of the executives (Safety Role Model) in order to communicate important safety policies or activities, listening to safety issues or suggestions, and workers involvement in safety activities.

### 5.3 Leisure activity

Promote corporate culture, attitude, belief, work values without stress such as promoting exercise, establishment of a walking and running sports club, badminton club, football club, and improve the workplace to facilitate the employees including improve the lobby for employees using to relax during working time. The objective is to enable all employees working together with love and engagement.

## 6. Occupational Health and Safety Training

The Company realizes the importance of occupational health and safety knowledge of employees and stakeholders, thus training on safety is held regularly such as safety orientation for new employees or employees who have to change their workplace and new job duties including training and drills for prevention and emergency response.

In addition, the Company has established an annual occupational health and safety training plan in 2020 with the following programs:

- Confined space worker
- Training and practice to suppress chlorine leakage with KIT-B equipment
- Maintenance of the Chlorine System and the use of Self Contained Breathing Apparatus (SCBA)
- Safety and Occupational Health and Environment Committee
- Safety in work on hazardous chemicals, use of personal protective equipment, and building environmental awareness

The number of training courses total of 11 courses and the total number of training hours on occupational health and safety in 2020 total 1,821.50 hours.

## 7. Employee Stewardship in Occupational Health and Safety

The Company realizes the work safety and the health of employees by providing a service in occupational health and safety on an annual basis such as safety training and annual health check-up etc.



## Performance in 2020

Target Results	2019	2020	Increase / Decrease (%)
Zero Injury & Illness Free Operation	0 time	0 time	Invariable (100%)
Practice emergency plans at least once a year	1 time	1 time	Invariable (100%)

# Safety First

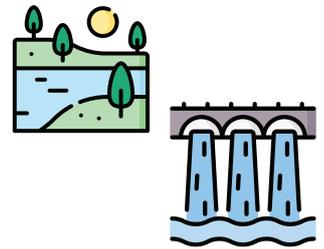




# Social and Community Development

## TTW and Community

The Company's business operation using raw water from natural water sources to produce tap water, a natural resource that may be a shortage in the future and may affect the community's water use. The Company realizes the social responsibility and environmental conservation together with sustainability, therefore, projects and activities are continually organized to develop good relations with the surrounding communities.



## Performance Goals for year 2020

- |  |   |   |   |
|--|---|---|---|
| <p>1. The number of social and environmental stewardship and natural resource conservation not less than</p> <p style="font-size: 2em; color: #0070C0;">10</p> <p>projects</p> | <p>2. The number of community benefits from social and environmental stewardship and natural resource conservation not less than</p> <p style="font-size: 2em; color: #C00000;">30</p> <p>communities</p> | <p>3. The number of communities' complaints from the impacts of the Company's business operation was</p> <p style="font-size: 2em; color: #90D060;">0</p> <p>time</p> | <p>4. The number of Sustainability awards received from an external agency at least</p> <p style="font-size: 2em; color: #0070C0;">1</p> <p>award</p> |
|--|---|---|---|

## Operating Guidelines

The Company is committed to being an organization driving the country's economy and infrastructure up to the civilization through the creation of utilities according to international standards, along with social responsibility and environmental stewardship. The Company emphasizes the communities around the water treatment plant by supporting various activities covering education, occupation, sanitation as well as environmental stewardship the people's quality of life in the community with three operating social aspects are as follows:



# Operations Management

## Human Resource Development

- Offering Scholarships to Student in Service Area and University
- Offering scholarships to student in service area covering 23 schools in Nakhon Pathom, Samut Sakhon, and Pathum Thani Province totaling 345 scholarships, 2,000 baht each, divided into 184 “Good Studies” scholarships and 161 “Good Behavior” scholarships
- Supporting scholarships for Thai Medical Devices Association, Mahidol University
- Promote Sludge Research Develop to a Product
- Promote sludge research scholarships for undergraduates Mahidol University, on the elimination of turbidity in water by using protein extracted from moringa seeds as coagulant
- Supporting sludge to Suan Sunandha Rajabhat University and Asian Institute of Technology (AIT) for experimental research benefit to education of students and universities



## Promote Quality of Life in the Community

- Construct and improve School Building
- Constructed a one-story building, 4 classrooms and toilets for Wat Rat Thammaram School, Samut Sakhon Province. Renovate the school building to Wat Sukwattanaram School Nakhon Pathom Province, and renovate the toilets for Wat Ban Phrao Nai School Pathum Thani Province
- Install Water Filtration Systems for Schools
- Install RO (Reverse Osmosis) system for Wat Rat Thammaram School, Samut Sakhon Province, Wat Sukwattanaram School Nakhon Pathom Province, and Wat Ban Phrao Nai School Pathum Thani Province
- Improve the Landscape and Promote School Well-Being
- Improve the organic farming area for Wat Rat Thammaram School, Samut Sakhon Province with support for children’s playground equipment
- Bottled Water
- Distribute 350 ml. bottled water produced by RO (Reverse Osmosis) system totaling 228,984 bottles to the public interest activities of stakeholders and generate income for the community employed for the amount of 148,800 baht.



## Conservation and Restoration of Natural Resources and the Environment

- Sludge Compost**
  - Establish the sludge mixed with food waste in the headquarters and expanded to Thairath Wittaya 4 School, Nakhon Pathom Province with a ratio of 1: 2 according to the research method of the Faculty of Environment, Kasetsart University
- Sludge Clay Tiles**
  - Produced tiles from sludge mixed with clay to decorate the school building at Wat Rat Thammaram School, Samut Sakhon Province and Wat Sukwattanaram School Nakhon Pathom Province according to the research methodology of the Center of Excellence on Hazardous Substance Management (HSM), Chulalongkorn University
- Training on Water Conservation and Natural Water Resources**
  - Collaborate training on the conservation of the Tha Chin river to the Sampatuan Day Care located along the Tha Chin river Nakhon Pathom, with 60 youths participating.
- Join the Care the Bear Program**
  - Join the SET' Care the Bear program, the objectives is to reduce the amount of GHG emission from events which can reduce the amount of GHG emissions from the 2020 AGM meeting and a scholarship event for students in the service area. This can reduce the carbon footprint of 1,109.07 kgCo<sub>2</sub>e, which is equivalent to the co<sub>2</sub>/Year uptake of 123 trees.



## Performance in 2020

Target Results	2019	2020	Increase / Decrease (%)
The number of social and environmental stewardship and natural resource conservation not less than 10 projects	21 projects	20 projects	Decrease 5%
The number of community benefits from social and environmental stewardship and natural resource conservation not less than 30 communities	60 communities	66 communities	Increase 10%
Zero of communities' complaints from the impacts of the Company's business operation	0 time	0 time	Invariable (100%)
The number of Sustainability awards received from an external agency at least 1 award	3 awards	3 awards	Invariable (100%)

# “Community” is Our good neighbor

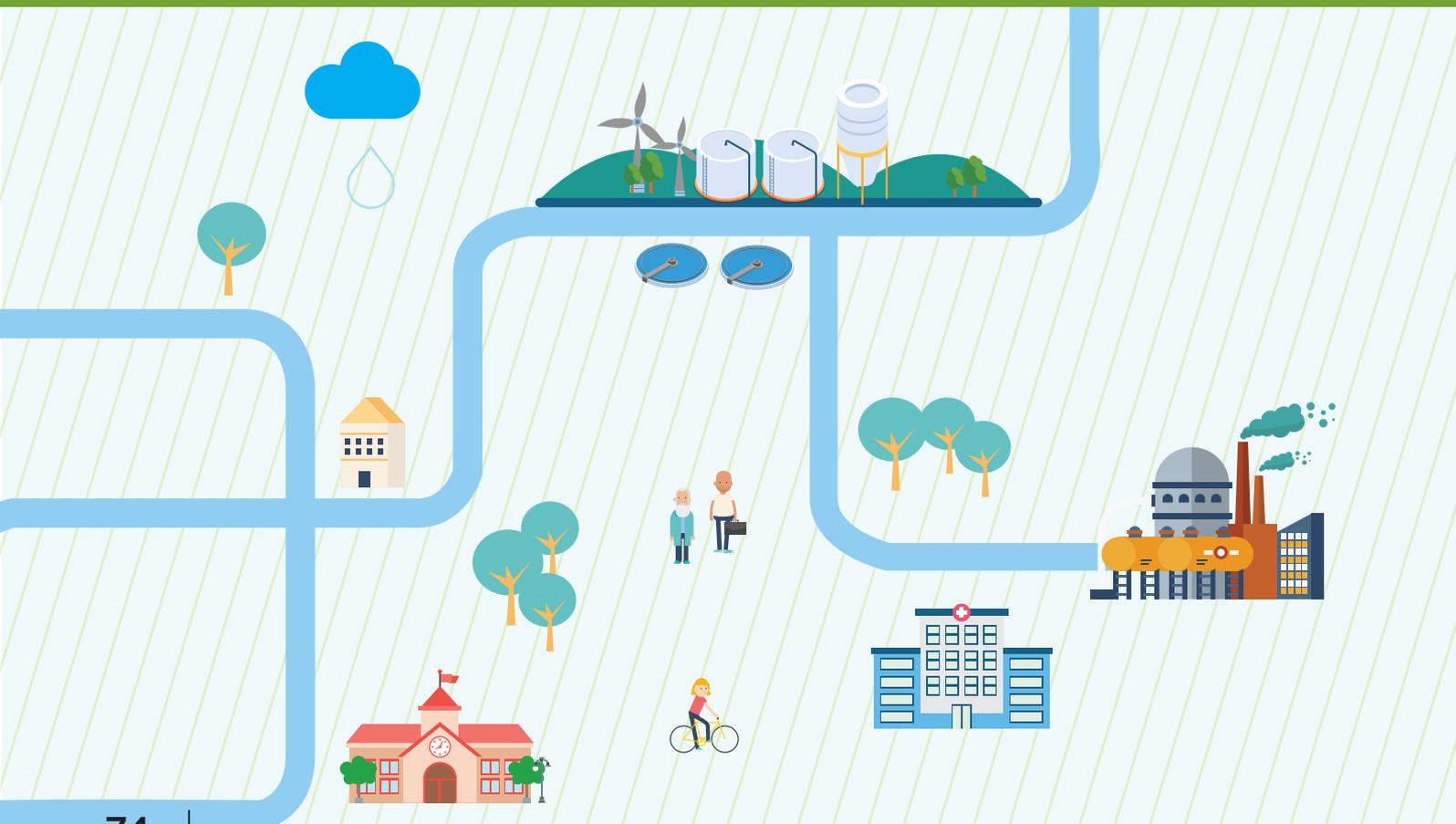




# Environmental Sustainability Management

The Company regards to the Company's business operation does not provide impact to the environment in order to prevent and control sustainable environmental impacts. Therefore, the Company has established the environmental objectives for the affiliates using as a guideline in order to effectively perform with the following key points:

<b>1.</b> Waste sorting according to the specified containers not less than 98% once a week	<b>2.</b> No sludge spills out to neighboring communities every 6 months	<b>3.</b> No environmental complaints from outside communities once a year	<b>4.</b> No lubricants or dangerous chemicals spills out 1 time / month
<b>5.</b> Results of working environment measurement comply with the law 1 time / 6 months	<b>6.</b> Safety Data Sheet (SDS) complete list of all chemicals used 1 time / 6 months	<b>7.</b> Emergency Drills at least (per year) 1 time / plan	





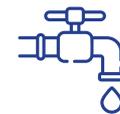
# Environmentally Friendly Process of Products and Services

## Tap Water Production without Loss of Water

The Company realizes the importance of products and services quality, along with taking into account the environmental impacts may arise from the Company's business operations, both directly and indirectly, by environmental management with ISO 14001 systems combined with the tap water production with Zero Discharge model. In addition, the residual sludge from the tap water production process was dewatered and returned to the new production process, this means throughout the process, no wastewater is released into natural water sources. As a result, 7,370,081 cubic meters of water recycled in new production processes in 2020.

## Wastewater Treatment

In addition to operating business of production and distribution tap water to the Provincial Waterworks Authority (PWA) in service areas; Nakhon Pathom, Samut Sakhon and Pathum Thani Province, the Company also operates a wastewater treatment business and improves water quality in Bang Pa-in Industrial Estate area in Ayutthaya Province, Amata City Industrial Estate area in Chonburi Province and Amata City Industrial Estate area in Rayong Province. The amount of improving water quality and producing tap water since 2016-2020 are as follows:



Tap Water Volume  
(Cubic meter)



## Application of Membrane Technology in Tap Water Production Processes

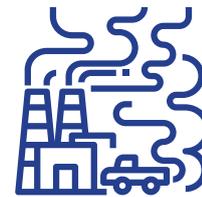
The Company realizes the importance of risk management from continual declining quality of raw water and may affect the Company's business operations, therefore, membrane technology was used in production process at the Krathum Baen Water Treatment Plant, Samut Sakhon Province. Membrane technology has higher filtering properties than conventional filtration and effectively removes contaminants that are pathogens such as viruses and bacteria. As a result, the quality of tap water has a better quality and can reduce the cost of using chemicals in the tap water production process.

In addition, membrane technology also responds to the increasing demand for tap water of people in Samut Sakhon Province. Using membrane technology in the tap water production at the Krathum Baen Water Treatment Plant, therefore, able to meet the needs of the public and solve economic, social, and environmental problems as well.

## Air Pollution Control

Although the Company's processes have a relatively small impact on air pollution, the Company regards no less importance to air pollution control than other operations due to currently, air pollution affecting the people's quality of life in the community and the environment greatly, in addition to the problem of particulate matter size 2.5 microns (PM 2.5) that is now intensifying in Thailand. The Company realizes to the supervision and control of the air quality emitted to the environment and focuses on the environmental management system in accordance with the international standard ISO 14001 without affecting the employees, contractors working in the Company's area, including the community surrounding the Company's Water Treatment Plant and the Company's operations area in order to sustainable business operation and balance of economy, society and environment. The Company defines the air pollution control are as follows:

1. Establish an environmental quality inspection plan, for example, dust emissions from the exhaust chimneys of secondary generators.
2. Establish measures and procedures for vehicle inspection from contractors or third parties entering and exiting the Company's operating area.



## Water Management

### Water recycling

The Company realizes the risk of water resources that may affect the business operation in the future due to water resources are the main raw materials for producing tap water. The Company is committed to participate in the conservation of water resources and driving operations towards the Sustainable Development Goals (SDGs) No.6 "Water availability and sanitation management for sustainability" by promoting the use of water resources wisely to reduce water shortages that may arise in the future.

The Company has 3 Water Treatment Plants, namely Bang Len Water Treatment Plant; Nakhon Pathom Province, Krathum Baen Water Treatment Plant; Samut Sakhon Province, and Pathum Thani Water Treatment Plant; Pathum Thani Province, using two surface water sources for the production of tap water, namely Tha Chin River and Chao Phraya River.

In 2020, the Bang Len and Krathum Baen Water Treatment Plant use 179.75 million cubic meters of raw water from the Tha Chin River, the Pathum Thani Water Treatment Plant use 161 million cubic meters of raw water from the Chao Phraya River. The consumption of water from both water sources are as follows:

Using Water from Natural Sources	Unit	2019	2020	Increase / Decrease (%)
Bang Len and Krathum Baen Water Treatment Plant	million cubic meters	166.02	179.75	Increase 8.27%
Pathum Thani Water Treatment Plant	million cubic meters	161.48	161.00	Decrease 0.30%
<b>Total</b>		<b>327.50</b>	<b>340.75</b>	<b>Increase 4.05%</b>

In order to the most using water resources serve the corporate goals, therefore, the company has designed tap water producing system with the most efficiency water recycling in the production process by adhering Water Discharge Minimization. The sludge collection system was designed to separate the water from the sludge returning to the tap water system again, thus water from the sludge removal system or the water back wash the sand filter tank will not be wasted. The procedures are as follows:

1. Sludge balancing tank, which serves to receive sludge generated by the clarifier, the sludge collected in the pond is pumped to the sludge thickener tank.
2. The wash water tank, which serves to receive water and sludge from the back wash of the filter system, in this section; clear water separated from the sludge is pumped back into

the tap water system in order to maximize the reuse of water, known as "Recovery Water". The sludge will be pumped through a pump into the sludge thickener tank.

3. Sludge dewatering system is the final system for removing water from sludge to make the sludge as dry as possible, this include recovery water is back to production again.

### Goal: Water Recycling



The recycled water proportion not less than

**5%**

of the total amount of water entering the production process

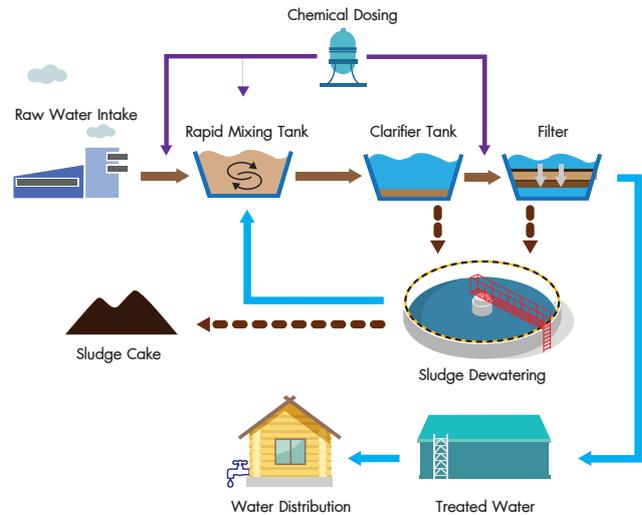
In 2020, the Bang Len and Krathum Baen Water Treatment Plant recycle water of 3.67 million cubic meters or equivalent to 2.05% compared with the total amount of water entering the production process. The Pathum Thani Water Treatment Plant recycles water of 3.69 million cubic meters or equivalent to 2.29% compared with the total amount of water entering the production process. The recycled water proportion of Bang Len, Krathum Baen, and Pathum Thani Water Treatment Plant are as follows:

Recycled Water Proportion	Unit	2019	2020	Increase / Decrease (%)
Bang Len and Krathum Baen Water Treatment Plant	Percent	1.07	2.05	Increase 1.43%
Pathum Thani Water Treatment Plant	Percent	2.95	2.29	Decrease 0.66%

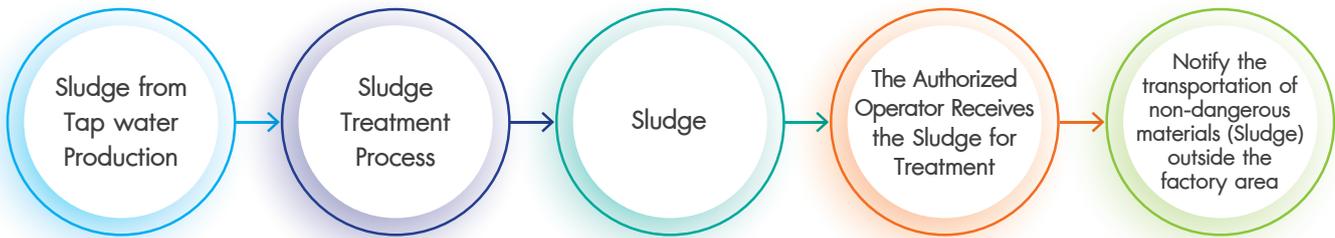


# Waste and Unused Materials Management

The Company regards to the waste management from water production process, the objective is waste management for maximum efficiency and reduce the cost of outsourcing. The waste management methods are appropriate or develop in to products. Sludge is classified as non-hazardous wastes from tap water production processes and the amount of non-hazardous wastes in this report is the result of operations from the Bang Len, Krathum Baen, and Pathum Thani Water Treatment Plant, tap water production consists of; raw water pumping process, chemical dosing process, clarifier process, filtration process, sterilization process, and pumping process which are shows a diagram of the company's water production process as follows:



If waste management is ineffective, it will increase the amount of waste and may result in complaints from nearby communities due to the waste leakage, the Company has systematically controlled waste management generated from the tap water production process in order to reduce the environmental impact that may arise from the sludge leakage. The diagram of waste management as follows:



The Company has studied the feasibility of sludge research to develop into a product with the objective of reducing the burden of waste disposal, production costs, and increasing value to the sludge as well as promoting a good image for social and environmental stewardship as follows:

1. The Company collaborates with Center of Excellence on Hazardous Substance Management (HSM), Chulalongkorn University; has studied the feasibility of using sludge to develop into products from this research four new products have emerged which are: 1) Fluoride absorbent 2) Interlocking bricks 3) Floor tiles 4) Clay tile. Currently, the products that have been further developed in the areas of social responsibility are "Clay tile" using for decorated the school building of Wat Rat Thammaram School, Samut Sakhon Province and Wat Sukwattanaram School, Nakhon Pathom Province under campaign enhance the students' quality of life in underprivileged school of the Office of Air Chief Marshal Prachin Juntong
2. The Company collaborates with the Faculty of Environment, Kasetsart University and Laem Phak Bia Environmental Research and Development Project, due to the Royal Decree; has studied the feasibility of using sludge to develop into products from this research three new products have emerged which are: 1) Compost for Suphanburi rice 1 and baby corn 2) Brick 3) Fuel pellets. Currently, the research "compost" is used in social activities by developing a project of sludge compost mixed with fresh waste within the head office to enable employees engage environment stewardship within the organization, a ratio of sludge to food waste 1: 2 and transformed knowledge to the school in the service areas: Thairath Wittaya 4 School, Bang Rakam, Bang Len,

Nakhon Pathom Province with the representatives of the Company and Faculty of Environment, Kasetsart University, has delivered knowledge on composting to selected schools act as a model school for transferring knowledge in composting to other schools in the neighborhood.

The Company is committed to conducting business without any negative impact on the environment by engaging with communities and related agencies in environmental stewardship as well as adding value to waste from water production processes, it can be seen that the wastes generated from tap water process contains only the sludge obtained from the clarifier and backwash process of the sand filter tank. In 2020, the Bang Len and Krathum Baen Water Treatment Plant have 18,677 tons of sludge generated from the tap water production process; the Pathum Thani Water Treatment Plant has 9,909 tons of sludge generated from the tap water production process, which are shown in the table as follows:



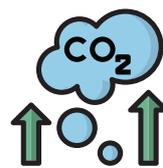
Quantity	Unit	2019	2020	Increase / Decrease (%)
Bang Len and Krathum Baen Water Treatment Plant	Tons	13,683	18,677	Increase 36.50%
Pathum Thani Water Treatment Plant	Tons	11,838	9,909	Decrease 16.30%
<b>Total</b>		<b>25,521</b>	<b>28,586</b>	<b>Increase 12.01%</b>
Sludge used in social research	Tons	10	10	Invariable (100%)

## Climate Change and Energy Conservation

### Greenhouse Gas Emissions

Climate change issue caused by the GHG emissions affects the livelihood of creatures which is an interested issue of all over the world. Thailand has joined the United Nations Framework Convention on Climate Change (UNFCCC), COP 21 in collaboration with other countries in various activities reducing the greenhouse gas concentration levels in the atmosphere to low emission as well as increasing potential for climate-resilient development that lead to low carbon economy, and achieve the Sustainable Development Goals.

#### Company's Goals: Greenhouse Gas Emissions



GHG emission proportion of the Bang Len, Krathum Baen, and Pathum Thani Water Treatment Plant decrease of not less than

**0.05%**

The Company use environmentally friendly measures to conducts business by considering the operation that may affect the environment for example the amount of greenhouse gas generated from the outside electricity consumption (indirectly), only main energy using to produce tap water to the distribution process to the tap water users covering three Water Treatment Plant which are: Bang Len Water Treatment Plant; Nakhon Pathom Province, Krathum Baen Water Treatment Plant; Samut Sakhon Province, and Pathum Thani Water Treatment Plant; Pathum Thani Province.



GHG Emission in 2020 at

**111,913**  
(tCO<sub>2</sub>e)

The Company assesses the amount of GHG emission to the environment from electricity consumption in production and distribution processes, as well as the number of tap water users in the service area; it was found that the Bang Len Water Treatment Plant GHG emission in 2020 amounted to 67,887 tCO<sub>2</sub>e, with an increasing ratio from 2019 at 7.30%, the Pathum Thani Water Treatment Plant GHG emission in 2020 amounted to 44,026 tCO<sub>2</sub>e, with an decreasing ratio from 2019 at 1.40% which shown the GHG emission are as follows:

The Amount of GHG Emission	Unit	2019	2020	Increase / Decrease (%)
Bang Len and Krathum Baen Water Treatment Plant	tCO <sub>2</sub> e	63,260	67,887	Increase 7.30%
Pathum Thani Water Treatment Plant	tCO <sub>2</sub> e	44,663	44,026	Decrease 1.40%
<b>Total</b>	tCO <sub>2</sub> e	<b>107,923</b>	<b>111,913</b>	<b>Increase 3.70%</b>
<b>GHG Emission Ratio Per Product Unit</b>				
Bang Len and Krathum Baen Water Treatment Plant	Kg.CO <sub>2</sub> ep. / m <sup>3</sup>	0.381	0.409	Increase 7.35%
Pathum Thani Water Treatment Plant	Kg.CO <sub>2</sub> ep. / m <sup>3</sup>	0.300	0.288	Decrease 4.00%
<b>Total</b>	Kg.CO <sub>2</sub> ep. / m <sup>3</sup>	<b>0.681</b>	<b>0.697</b>	<b>Increase 2.35%</b>

## Energy Conservation

The Company realizes the maximum efficiency of electricity consumption, therefore, established energy conservation measures in accordance with the Energy Management Report in order to reduce the GHG emission from electricity consumption; the main energy used in the Company's business operations as well as the selection of technology and environmentally friendly raw materials which consistent with the Company's Goals.

### Company's Goals: Electricity Consumption



The electricity consumption at the Bang Len, Krathum Baen, and Pathum Thani Water Treatment Plant decrease of not less than

**0.05%**

The Company defines the energy conservation measures in accordance with the Energy Management Report in order to reduce the GHG emission from electricity consumption with the following information:

- Maintenance of split air conditioners
- Replacement of LED lamps of sand filters tanks and sludge tanks
- Replacement of LED street lamps within the water treatment plant and distribution stations

All of the above measures have been continuously monitored performance in order to ensure that the electricity consumption and GHG emission rates of Bang Len, Krathum Baen, and Pathum Thani Water Treatment Plant can be effectively controlled.

In 2020, the Company has the electricity consumption in the production process of the Bang Len and Krathum Baen Water Treatment Plant in the amount of 112,615,256 kWh or 0.679 kWh / m<sup>3</sup>, the Pathum Thani Water Treatment Plant in the amount of 70,284,195 kWh or 0.459 kWh / m<sup>3</sup>, which the following details:

The Electricity Consumption in Production	Unit	2019	2020	Increase / Decrease (%)
Bang Len and Krathum Baen Water Treatment Plant	GWh	101.21	112.62	Increase 11.27%
Pathum Thani Water Treatment Plant	GWh	71.46	70.28	Decrease 1.65%
<b>Total</b>	<b>GWh</b>	<b>172.67</b>	<b>182.90</b>	<b>Increase 10.23%</b>
<b>Electricity Consumption Ratio Per Product Unit</b>				
Bang Len and Krathum Baen Water Treatment Plant	GWh / m <sup>3</sup>	0.611	0.679	Increase 11.13%
Pathum Thani Water Treatment Plant	GWh / m <sup>3</sup>	0.480	0.459	Decrease 4.38%
<b>Total</b>	<b>GWh / m<sup>3</sup></b>	<b>1.091</b>	<b>1.138</b>	<b>Increase 4.31%</b>

In 2020, Bang Len Water Treatment Plant has established a project to improve production processes and machines to increase working efficiency, resulting in higher electricity consumption during the process as well as the amount of tap water distribution tends to decrease, as a result, the rate of electricity consumption per product unit is also higher.

## Solar Rooftop System

In 2018, The Company studied the possibility of installing a Solar Rooftop system on a clear water tank at the Bang Len Water Treatment Plant, Nakhon Pathom with the objective to reduce the amount of electricity consumption and GHG emission from business operations. The Company has the potential in the area where a solar rooftop system can be installed on a clear water tank with a total installed capacity of 3,471 MWdc which is capable of generating electricity of 4,236,395 kWh / year, which is approximately 17,893,565 baht / year this includes decreasing in the GHG emission of 2,398 tCO<sub>2</sub>e / year, an investment is approximately 187 million baht, it will take approximately 10.5 years to pay back the capita. The feasibility study report for the solar rooftop installation project has adopted the hypothesis of installing solar rooftop of Bang Len Water Treatment Plant as a model by studying solar power generation data, technology, cost and expenses, then assess the feasibility of the project together with the financial analysis.



In 2020, the total electricity generated from the Solar Rooftop system is

**4,367,503**  
kWh

The performance in 2020 is able to generate electricity from the Solar Rooftop system totaling 4,367,503 kWh and reduce GHG emission of 2,727 tCO<sub>2</sub>e

Solar Rooftop Detail	Unit	2019	2020	Increase / Decrease (%)
The amount of electricity from the Solar Rooftop system	kWh	5,329,481	4,367,503	Decrease 18.05%
Reduce Greenhouse Gas Emission	tCO <sub>2</sub> e	3,340	2,727	Decrease 18.35%



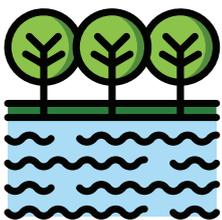
## Biodiversity

### Tap Water Production Process

In the past, the Company’s business operations did not have a significant negative impact on the natural organisms. The Company using raw water from two natural water sources for tap water production, namely the Tha Chin River and the Chao Phraya River which is full of aquatic animals and others, it is inevitable that pumping raw water into the tap water process does not affect these organisms.

The company has installed a fine grating of 1 x 1 cm in width in the raw water pumping area to prevent aquatic animals are pumped in to the production process. In addition, the tap water production with Zero Discharge model by the residual sludge from the tap water production process was dewatered and returned to the new production process, this means throughout the process, no wastewater is released into natural water sources.

### Watershed Stewardship



In 2018, the Company has delivered 1,000,000 planted trees in an area of 5,000 Rais in the degraded forest area of Thong Pha Phum National Park, Pilok, Thong Pha Phum, Kanchanaburi Province to the Department of National Parks, Wildlife and Plant Conservation (DNP) for 7 consecutive years. Although the reforestation has been completed and it has been handed over to the relevant authorities, the Company continues to monitor the growth of the trees, forest fire surveillance, and continuously went to the area to

measure the height of the trees planted with DNP officials, the objective for achieving the 1 millionth seedlings project to create watershed forests “Afforestation Get Forest” in order to preserve the watershed forest of the Mae Klong River that has branched out into

the Tha Chin River which the Company uses in the tap production process. In 2020, the Company suspended visiting the area due to the COVID-19 situation; there has been coordination with the authorities regularly.



## Environment Cooperation between Organizations

### Engage with External Agencies

The Company is unable to operate a sustainable business in the future without cooperation from the community and agencies in the past. The Company participates in the planning and preparation of the energy conservation, natural resources conservation, and environment stewardship with external agencies are as follows:

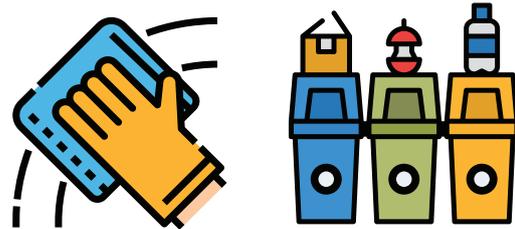
1. The Company joins the SET's Care the Bare project with the objective to reduce the GHG emission, resource use, and event expenses of listed companies. In 2020, two activities have been introduced to join the project which are: 2020 AGM meeting event and offering scholarships to student in service area event for the year 2020, This reduced the carbon footprint of 1,109,07 kgCO<sub>2</sub>e, equivalent to CO<sub>2</sub> absorption of 123 trees per year.
2. The Company collaborates with We Love Tha Chin River Club, Nakhon Pathom by attending a monthly meeting to acknowledge the problem and jointly solve the problem of the Tha Chin River, promote awareness of water saving and conservation of water resources in the community continuously for more than 10 years. In 2020, the Company support training “How to teach youths to love concrete Tha Chin” to teachers and careers at the Sampatuan Day Care, Nakornchaisri, Nakhon Pathom Province to cultivate awareness of water resources conservation to local communities.
3. The Company collaborates with the Center of Excellence on Hazardous Substance Management (HSM), Chulalongkorn University used sludge research results, such as “clay tiles” decorate the school building for Wat Rat Thammaram School, Samut Sakhon Province and Wat Sukwattanaram School, Nakhon Pathom Province.
4. The Company collaborates with Faculty of Environment, Kasetsart University and Laem Phak Bia Environmental Research and Development Project, due to the Royal Decree used the results of sludge research such as “Compost” to produce compost from sludge mixed with food waste in Thairath Wittaya 4 School, Nakhon Pathom Province.



5. The Company coordinates with the Office of Conservation Area Administration 3, Department of National Parks, Wildlife and Plant Conservation to monitor the growth of trees planted under the 1 millionth seedlings project to create watershed forests.
6. The Company supports Samut Sakhon activities to collect marine debris at the Mangrove Forest Resources 2 (Samut Sakhon).
7. The Company supports sludge from Bang Len Water Treatment Plant to Suan Sunandha Rajabhat University and Asian Institute of Technology (AIT) for the benefit of experimental research.
8. The Company has financial support to the sludge research for undergraduate students at Mahidol University on the elimination of turbidity in water using moringa seed protein as coagulant.

## Employee Engagement

The Company supports and promotes employees' participation in environmental stewardship activities with the aim of raising employees to realize the importance of environmental management within the organization such as the big cleaning day activities, waste sorting, and composting from sludge mixed with food waste within the head office with cooperation from employees at all levels regularly participate in activities.



## Environmental Compliance

The Company realizes the importance of conducting business with environmentally friendly and adheres fully comply with the conditions and requirements set forth in the law.

### 1. Operational Goals

The Company aware of environmental management along with business operations by establishing an environmental management system (ISO14001) with the goal of internal auditing at least once a year in order to raise awareness and audit environmental management system for employees.

### 2. Operation

The Company followed up within the ISO 14001 system from December 12, 2019 - January 20, 2020 by considering and appointing a competent person to act as an internal auditor from the environmental management department. In 2020, there is one internal audit of the ISO 14001 system, the results meet the target, effectively preventing non-compliance with environmental laws.

### 3. Performance

The Company was certified for environmental management system by SGS (Thailand) Co., Ltd. on 25 - 27 May, 2020. The 2020 performance, there were no serious issues or processes that did not comply with environmental laws.





# 2020 Performance Summary



## Economic Performance

### Economic success

Detail	2016	2017	2018	2019	2020	Unit
Net sales	5,499,089,046	5,747,448,016	5,948,536,254	6,165,591,032	6,203,116,678	Baht
EBITDA	4,429,425,658	4,699,899,949	4,910,525,378	5,269,752,426	4,997,134,101	Baht
Net profit	2,492,486,565	2,680,751,538	2,860,903,791	3,147,333,971	2,971,811,031	Baht
Earnings per share	0.62	0.67	0.71	0.78	0.74	Baht
Return on assets	9.67	11.52	12.26	13.59	13.01	%
Return on Equity	21.61	22.57	23.14	23.98	21.69	%

### Value Distribution to Shareholders

Detail	2016	2017	2018	2019	2020	Unit
Dividends to shareholders (only in the first half of 2020)	2,394,000,000	2,394,000,000	2,394,000,000	2,394,000,000	1,197,000,000	Baht
Dividend per share (only in the first half of 2020)	0.60	0.60	0.60	0.60	0.30	(Baht / Share)

### TTW's Investment Value and its Subsidiaries

Detail	2016	2017	2018	2019	2020	Unit
Utilities investment and other support	1,652.53	349.53	20.89	140.07	431.49	Million Baht

### TTW's Other Economic Value

Detail	2016	2017	2018	2019	2020	Unit
Financial cost	433,178,951	407,025,029	371,677,534	304,542,661	274,534,160	Baht
Tax payment to the Government	606,667,937	632,221,086	616,091,619	696,977,417	685,387,474	Baht

## TTW's Tap Water Distribution and its Subsidiaries

Detail	2016	2017	2018	2019	2020	Unit
Nakhon Pathom - Samut Sakhon areas	138.40	145.90	158.30	166.10	165.85	million m <sup>3</sup>
Pathum Thani - Rangsit area	131.40	135.80	145.90	148.90	153.12	million m <sup>3</sup>
Total	269.80	281.70	304.20	315.00	319.97	million m <sup>3</sup>

## TTW's Tap Water Users and its Subsidiaries

Detail	2016	2017	2018	2019	2020	Unit
Nakhon Pathom - Samut Sakhon areas	165,586	174,577	183,853	193,903	203,225	Users
Pathum Thani - Rangsit area	310,917	321,048	335,324	345,683	356,351	Users
Total	476,503	495,625	519,177	539,586	559,576	Users

## TTW's Customers Satisfaction Survey Result and its subsidiaries

Detail	2016	2017	2018	2019	2020	Unit
Nakhon Pathom - Samut Sakhon areas	87.00	89.00	95.00	98.00	97.00	%
Pathum Thani - Rangsit area	87.00	89.00	96.00	99.00	96.00	%
Average	87.00	89.00	95.50	98.50	96.50	%



## Social Performance

### Value of Investment in Personnel of TTW and its Subsidiaries

Detail	2016	2017	2018	2019	2020	Unit
Employee compensation (salary wages, employee development expenses and others)	146.66	157.13	140.03	149.42	149.94	Million Baht
Executive compensation	35,128,821	33,025,591	26,098,201	26,569,376	25,499,030	Baht

### Value of Investment in Community and Society of TTW and its Subsidiaries

Detail	2016	2017	2018	2019	2020	Unit
Community donation and development	11,340,827.77	41,298,352	6,468,125.60	15,371,569.54	25,178,964.52	Baht

## Employment

Detail	2016	2017	2018	2019	2020	Unit
<b>All employees</b>						
Male	258	264	267	268	270	Persons
Female	55	58	54	56	58	Persons
<b>Total</b>	<b>313</b>	<b>322</b>	<b>321</b>	<b>324</b>	<b>328</b>	<b>Persons</b>
<b>New employees classified by gender</b>						
Male	38	30	25	18	9	Persons
Female	11	3	4	2	3	Persons
<b>Total</b>	<b>49</b>	<b>33</b>	<b>29</b>	<b>20</b>	<b>12</b>	<b>Persons</b>
<b>New employees classified by business area</b>						
NaKhon Pathom	22	13	8	5	5	Persons
Samut Sakhon	2	15	6	2	1	Persons
Pathum Thani	5	-	4	2	1	Persons
Chon Buri	12	-	5	4	-	Persons
Rayong	7	2	4	6	4	Persons
Ayutthaya	1	3	2	1	1	Persons
<b>Total</b>	<b>49</b>	<b>33</b>	<b>29</b>	<b>20</b>	<b>12</b>	<b>Persons</b>
<b>Employees resign classified by gender</b>						
Male	10	26	23	10	5	Persons
Female	1	1	7	-	2	Persons
<b>Total</b>	<b>11</b>	<b>27</b>	<b>30</b>	<b>10</b>	<b>7</b>	<b>Persons</b>
<b>Employees resign classified by business area</b>						
NaKhon Pathom	5	16	16	7	4	Persons
Samut Sakhon	-	1	-	1	-	Persons
Pathum Thani	-	4	3	-	-	Persons
Chon Buri	2	2	4	1	1	Persons
Rayong	3	3	5	1	2	Persons
Ayutthaya	1	1	2	-	-	Persons
<b>Total</b>	<b>11</b>	<b>27</b>	<b>30</b>	<b>10</b>	<b>7</b>	<b>Persons</b>
<b>Employees parental leave classified by business area</b>						
NaKhon Pathom	3	4	3	2	2	Persons
Samut Sakhon	-	-	-	-	1	Persons
Pathum Thani	-	-	-	-	1	Persons

Detail	2016	2017	2018	2019	2020	Unit
Chon Buri	-	-	-	-	-	Persons
Rayong	-	-	-	-	-	Persons
Ayutthaya	-	-	-	1	-	Persons
<b>Total</b>	<b>3</b>	<b>4</b>	<b>3</b>	<b>3</b>	<b>4</b>	<b>Persons</b>
<b>Employee back to work after parental leave</b>						
NaKhon Pathom	100	100	100	100	100	%
Samut Sakhon	-	-	-	-	100	%
Pathum Thani	-	-	-	-	100	%
Chon Buri	-	-	-	-	-	%
Rayong	-	-	-	-	-	%
Ayutthaya	-	-	-	100	-	%
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>%</b>

## Employees Development

Detail	2016	2017	2018	2019	2020	Unit
<b>Training hours</b>						
Total training hour	8,839	6,973	4,719	4,498	3,177	Hours
Average training hour	31	28	19	14	10	Hours / Person
<b>Training hours classified by position</b>						
Executive	2,211	2,516.50	1,357	747	502	Hours
Employee	6,628	4,456.50	3,362	3,751	2,675	Hours
<b>Total</b>	<b>8,839</b>	<b>6,973</b>	<b>4,719</b>	<b>4,498</b>	<b>3,177</b>	<b>Hours</b>
<b>Training hours classified by gender</b>						
Male	7,099	5,262.50	3,712	3,768	2,636	Hours
Female	1,740	1,710.50	1,007	730	541	Hours
<b>Total</b>	<b>8,839</b>	<b>6,973</b>	<b>4,719</b>	<b>4,498</b>	<b>3,177</b>	<b>Hours</b>
<b>Amount of Training Expenses</b>						
Total Expenses	2,186,417	2,319,491	1,092,490	597,563	194,956	Baht
<b>Amount of Training Expenses classified by position</b>						
Executive	1,346,289	1,651,055	645,951	348,093	119,996	Baht
Employee	840,128	668,436	446,539	249,470	74,960	Baht
<b>Total</b>	<b>2,186,417</b>	<b>2,319,491</b>	<b>1,092,490</b>	<b>597,563</b>	<b>194,956</b>	<b>Baht</b>

Detail	2016	2017	2018	2019	2020	Unit
<b>Number of training courses</b>						
Internal training course	63	21	22	15	14	Courses
External training course	95	108	76	76	46	Courses
<b>Total</b>	<b>158</b>	<b>129</b>	<b>98</b>	<b>91</b>	<b>60</b>	<b>Courses</b>
<b>Number of participants classified by position</b>						
Executive	49	47	35	24	27	Persons
Employee	240	207	212	239	192	Persons
<b>Total</b>	<b>289</b>	<b>254</b>	<b>247</b>	<b>263</b>	<b>219</b>	<b>Persons</b>
<b>Number of participants classified by gender</b>						
Male	236	198	198	220	174	Persons
Female	53	56	49	43	45	Persons
<b>Total</b>	<b>289</b>	<b>254</b>	<b>247</b>	<b>263</b>	<b>219</b>	<b>Persons</b>
<b>Total Employee</b>	<b>313</b>	<b>322</b>	<b>321</b>	<b>324</b>	<b>328</b>	<b>Persons</b>

## Safety and Occupational Health

Detail	2016	2017	2018	2019	2020	Unit
Accident statistics	0	1	0	0	0	Times
Accident frequency rate	0	1.12	0	0	0	Time / 200,000 Hours / Person
Accident severity rate	0	6,747	0	0	0	Time / 200,000 Hours / Person

## Youth Development Scholarships

Detail	2016	2017	2018	2019	2020	Unit
Scholarships for employees' children	166	164	185	193	187	Scholarships
Scholarships for customers' children	0	294	298	293	284	Scholarships
Scholarships for students in community	170	170	230	230	345	Scholarships
<b>Total</b>	<b>336</b>	<b>628</b>	<b>713</b>	<b>716</b>	<b>816</b>	<b>Scholarships</b>

## Bottled Water Distribute Social Activities

Detail	2016	2017	2018	2019	2020	Unit
Bottled water distribution volume	208,952	242,928	225,648	280,761	228,984	Bottles



# Environmental Performance

## Environmental Stewardship Value

Detail	2016	2017	2018	2019	2020	Unit
Environmental Stewardship	1,733,857.50	1,161,395	1,741,155.00	12,753,618.20	2,203,870.00	Baht

## Water Resource Consumption

Water Consumption from Natural Sources	2016	2017	2018	2019	2020	Unit
Tha Chin River (Bang Len and Krathum Baen Water Treatment Plant)	143.20	155.64	165.79	166.02	179.75	million m <sup>3</sup>
Chao Phraya River (Pathum Thani Water Treatment Plant)	141.61	147.96	159.77	161.48	161.00	million m <sup>3</sup>
<b>Total</b>	<b>284.81</b>	<b>303.6</b>	<b>325.56</b>	<b>327.50</b>	<b>340.75</b>	<b>million m<sup>3</sup></b>
<b>Water Recycling</b>						
Bang Len and Krathum Baen Water Treatment Plant	2.38	2.32	1.82	1.78	3.68	million m <sup>3</sup>
Pathum Thani Water Treatment Plant	7.68	8.14	3.33	4.76	3.69	million m <sup>3</sup>
<b>Total</b>	<b>10.06</b>	<b>10.46</b>	<b>5.16</b>	<b>6.54</b>	<b>7.37</b>	<b>million m<sup>3</sup></b>

## Electricity Consumption

Electricity Consumption	2016	2017	2018	2019	2020	Unit
Bang Len and Krathum Baen Water Treatment Plant	114.44	97.19	100.39	101.21	112.62	GWh
Pathum Thani Water Treatment Plant	62.51	66.23	69.61	71.46	70.28	GWh
<b>Total</b>	<b>176.95</b>	<b>163.42</b>	<b>170.00</b>	<b>172.67</b>	<b>182.90</b>	<b>GWh</b>
<b>Electricity Consumption Rate per Product Unit</b>						
Bang Len and Krathum Baen Water Treatment Plant	0.827	0.666	0.632	0.611	0.679	GWh / m <sup>3</sup>
Pathum Thani Water Treatment Plant	0.476	0.488	0.477	0.480	0.459	GWh / m <sup>3</sup>
<b>Total</b>	<b>1.300</b>	<b>1.150</b>	<b>1.110</b>	<b>1.091</b>	<b>1.138</b>	<b>GWh / m<sup>3</sup></b>

## Greenhouse Gas Emission

GHG Emission	2016	2017	2018	2019	2020	Unit
Bang Len and Krathum Baen Water Treatment Plant	73,083	61,837	63,795	63,260	67,887	tCO <sub>2</sub> e
Pathum Thani Water Treatment Plant	61,836	42,112	44,231	44,663	44,026	tCO <sub>2</sub> e
<b>Total</b>	<b>134,919</b>	<b>103,949</b>	<b>108,026</b>	<b>107,923</b>	<b>111,913</b>	<b>tCO<sub>2</sub>e</b>
<b>GHG Emission Rate per Product Unit</b>						
Bang Len and Krathum Baen Water Treatment Plant	0.528	0.424	0.403	0.381	0.409	kgCO <sub>2</sub> e
Pathum Thani Water Treatment Plant	0.302	0.310	0.303	0.300	0.288	kgCO <sub>2</sub> e
<b>Total</b>	<b>0.830</b>	<b>0.734</b>	<b>0.706</b>	<b>0.681</b>	<b>0.697</b>	<b>kgCO<sub>2</sub>e</b>

## Sludge Volume

Detail	2016	2017	2018	2019	2020	Unit
Bang Len and Krathum Baen Water Treatment Plant	11,040	7,627	10,943	13,683	18,677	Tons
Pathum Thani Water Treatment Plant	23,492	22,552	21,360	11,838	9,909	Tons
<b>Total</b>	<b>34,532</b>	<b>30,179</b>	<b>32,303</b>	<b>25,521</b>	<b>28,586</b>	<b>Tons</b>
The amount of sludge used in the research	0	0	0	10	10	Tons



# Awards of Pride




## Thailand Sustainability Investment 2020

Listed for Thailand Sustainability Investment (THSI) for the year 2020 from the Stock Exchange of Thailand for the fifth consecutive year. This reflects the business operation of company that realizes the importance of sustainable development.




## Honorary plaque of Anti-Corruption Foundation

The Honorary plaque from Anti-Corruption Foundation which the monks training project “Chor Sa-Aad” for the year 2020 to develop the community of “Chor Sa-Aad” and build awareness of the youth to adhere to honesty and create a transparent society.




## 2020 ESG100

Selected as one of the Top 100 Outstanding Sustainable Businesses (ESG 100) for the year 2020 from the Thaipat Institute for the fifth consecutive year. As a listed company that conducts business with environmental, social and governance responsibilities (Environmental, Social and Governance : ESG)




## Certificate of SDG Impact Company

The Certificate of SDG Impact Company for the year 2020 from the Thaipat Institute to assessed the impact on the SDGs at the “GOLD CLASS” level. That operate businesses in response to the Sustainable Development Goals (SDGs) which covers economic, social, environmental and governance dimensions.

## Corporate Governance Report of Thai Listed Companies 2020



The corporate governance assessment at “Excellent level” for the year 2020 from the Thai Institute of Directors Association.




## Honorary plaque from Prince Krom Phrasrisawangkhawat Worakattiyaratnari

The Honorary plaque from Prince Krom Phrasrisawangkhawat Worakattiyaratnari at the international academic conference “Pure and Applied Chemistry International Conference 2020” (PACCON 2020) as a partnering organization for the conference.




## Financial credit rating for corporate credit and debt instruments 2020 at “AA-” level.

Received an “AA-” rating for Corporate Credit and Bonds for the year 2020 with a “stable” outlook from TRIS Rating Co., Ltd.




## Sustainability Disclosure Award 2020

Received an award of honor “Sustainability Disclosure Award” for the year 2020 from the Thaipat Institute in assessing the company’s sustainability development report that provides complete and reliable information on sustainability according to the Global Reporting Initiative (GRI) reporting framework.

# Global Reporting Initiative

## GRI-Standard Content Index

Disclosure	Description	Page		Detail/ Omission
		Sustainability Report	Annual Report	
GRI 101: Foundation 2016				
GRI 102: General Disclosures 2016				
<b>Organizational Profile</b>				
102-1	Name of the organization	8	52	
102-2	Activities, brands, products, and services	8,10	28	
102-3	Location of headquarters	7	52	
102-4	Location of operations	10-11	52-54	
102-5	Ownership and legal form	10-12	31-39	
102-6	Markets served	10	40-43	
102-7	Scale of the organization	15	62	
102-8	Information on employees and other workers	57-63,87-89	81-82,96-97	
102-9	Supply chain	45-49	45	
102-10	Significant changes to the organization and its supply chain	43-44		
102-11	Precautionary Principle or approach	43-44,48		
102-12	External initiatives	7,33,71,83-84		
102-13	Membership of associations	7,33		
<b>Strategy</b>				
102-14	Statement from senior decision-maker	6	8-9	
102-15	Key impacts, risks, and opportunities	18-21,39-40	49	
<b>Ethics and Integrity</b>				
102-16	Values, principles, standards, and norms of behavior	4	4	
102-17	Mechanisms for advice and concerns about ethics	32-37	91-94	
<b>Governance</b>				
102-18	Governance structure	15,34	70	
102-19	Delegating authority	35	118-119	
102-20	Executive-level responsibility for economic, environmental, and social topics	15		
102-21	Consulting stakeholders on economic, environmental, and social topics	16-17		
102-22	Composition of the highest governance body and its committees	15	110	
102-23	Chair of the highest governance body	34	66,77	
102-24	Nominating and selecting the highest governance body	33	121-122	
102-25	Conflicts of interest	35	95,99	
102-26	Role of highest governance body in setting purpose, values, and strategy	33	66-67	
102-27	Collective knowledge of highest governance body	35	89	
102-28	Evaluating the highest governance body's performance	34	112-114	
102-29	Identifying and managing economic, environmental, and social impacts	22-26	45-46	
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102-34	Nature and total number of critical concerns	37		
102-35	Remuneration policies	33	75,84	
102-36	Process for determining remuneration	34	84	
102-37	Stakeholders' involvement in remuneration	33		
102-38	Annual total compensation ratio	34	78-82, 85	
102-39	Percentage increase in annual total compensation ratio	34		

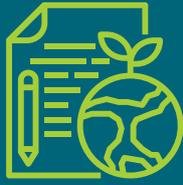
Disclosure	Description	Page		Detail/ Omission
		Sustainability Report	Annual Report	
<b>Stakeholder Engagement</b>				
102-40	List of stakeholder groups	27-30	96-99	
102-41	Collective bargaining agreements	28-30	96-99	
102-42	Identifying and selecting stakeholders	27	96-99	
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201-3	Defined benefit plan obligations and other retirement plans	40		
201-4	Financial assistance received from government	-		
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103-3	Evaluation of the management approach	62,87-89		
202-1	Ratios of standard entry level wage by gender compared to local minimum wage	-		
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<b>GRI 203: Indirect Economic Impacts 2016</b>				
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204-1	Proportion of spending on local suppliers	49		
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Disclosure	Description	Page		Detail/ Omission
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Disclosure	Description	Page		Detail/ Omission
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<b>GRI 308: Supplier Environmental Assessment 2016</b>				
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Disclosure	Description	Page		Detail/ Omission
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<b>GRI 406: Non-discrimination 2016</b>				
103-1	Explanation of the material topic and its Boundary	33,57-58	95,96	
103-2	The management approach and its components	33,57-58	95,96	
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<b>GRI 412: Human Rights Assessment 2016</b>				
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Disclosure	Description	Page		Detail/ Omission
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412-2	Employee training on human rights policies or procedures	-		
412-3	Significant investment agreements and contracts that include human rights clauses or that underwent human rights screening	59-60		
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103-1	Explanation of the material topic and its Boundary	69		
103-2	The management approach and its components	69		
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103-2	The management approach and its components	46		
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# Readers' Opinion Survey

Feedback Form for Sustainability Report 2020

TTW Public Company Limited (TTW)

## 1. Please specify your relationship with TTW?

- |                                      |                                     |  |  |
|--------------------------------------|-------------------------------------|--|--|
| <input type="checkbox"/> Employee    | <input type="checkbox"/> Community  | <input type="checkbox"/> Customer              | <input type="checkbox"/> Government                  |
| <input type="checkbox"/> Supplier    | <input type="checkbox"/> Contractor | <input type="checkbox"/> Financial institution | <input type="checkbox"/> Business partner            |
| <input type="checkbox"/> Shareholder | <input type="checkbox"/> Investor   | <input type="checkbox"/> NGOs                  | <input type="checkbox"/> Other (Please specify.....) |

## 2. How did you receive this report?

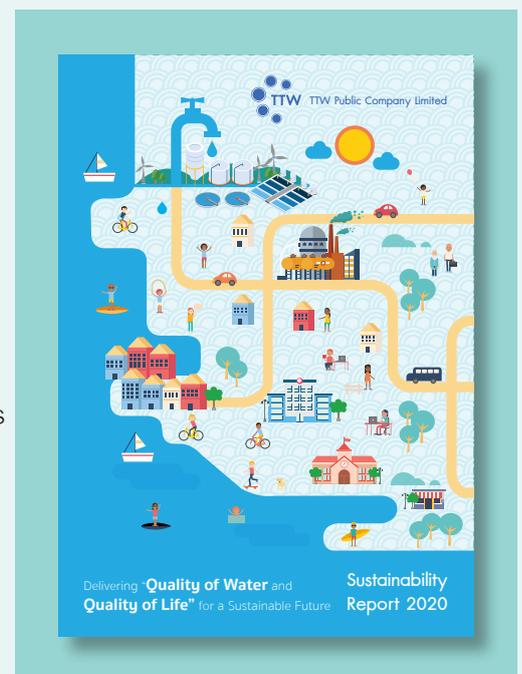
- |  |  |
|--|--|
| <input type="checkbox"/> Annual general meeting      | <input type="checkbox"/> TTW's website |
| <input type="checkbox"/> TTW's Employee              | <input type="checkbox"/> Seminar       |
| <input type="checkbox"/> Other (Please Specify.....) |  |

## 3. What is your reason for reading this report?

- |  |   |
|--|---|
| <input type="checkbox"/> To support investment decision      | <input type="checkbox"/> To understand TTW's business |
| <input type="checkbox"/> For research and education purposes |   |
| <input type="checkbox"/> Other (Please Specify.....)         |   |

## 4. Please indicate the topic(s) that you are interested in.

- Economy**
  - Good Corporate Governance
  - Risk Management and Business Continuity
  - Crisis Management from the COVID-19 Situation
  - Supply Chain Management
  - Products and Services Responsibility
  - Innovation and Technology
- Environment**
  - Environmentally Friendly Process of Products and Services
  - Water Management
  - Waste and Unused Materials Management
  - Climate Change and Energy Conservation
  - Biodiversity
  - Environment Cooperation between Organization
  - Environmental Compliance



**Employees & Society**

- Employee Stewardship and Development
- Occupational Health and Safety
- Social and Community Development

**5. In your opinion, does the report cover all material topics?**

- Yes  No

If no, please specify topic(s) that should be included.

.....

.....

**6. Please rate your satisfaction towards our Sustainability Report 2020**

6.1	Completeness	<input type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low	<input type="checkbox"/> Dissatisfied
6.2	Materiality	<input type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low	<input type="checkbox"/> Dissatisfied
6.3	Attractive content	<input type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low	<input type="checkbox"/> Dissatisfied
6.4	Ease to understand	<input type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low	<input type="checkbox"/> Dissatisfied
6.5	Report design	<input type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low	<input type="checkbox"/> Dissatisfied
6.6	Overall satisfaction	<input type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Low	<input type="checkbox"/> Dissatisfied

**7. Please provide other comments or suggestions for further improvement.**

.....

.....

.....

Thank you for your kind cooperation.  
Your feedback is very useful for our further improvement.



“

Every step in the business operation of TTW moves further along the path of mutual awareness and a comprehensive understanding of economic, social and environmental dimensions for sustainable growth together.

”

## TTW Public Company Limited

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