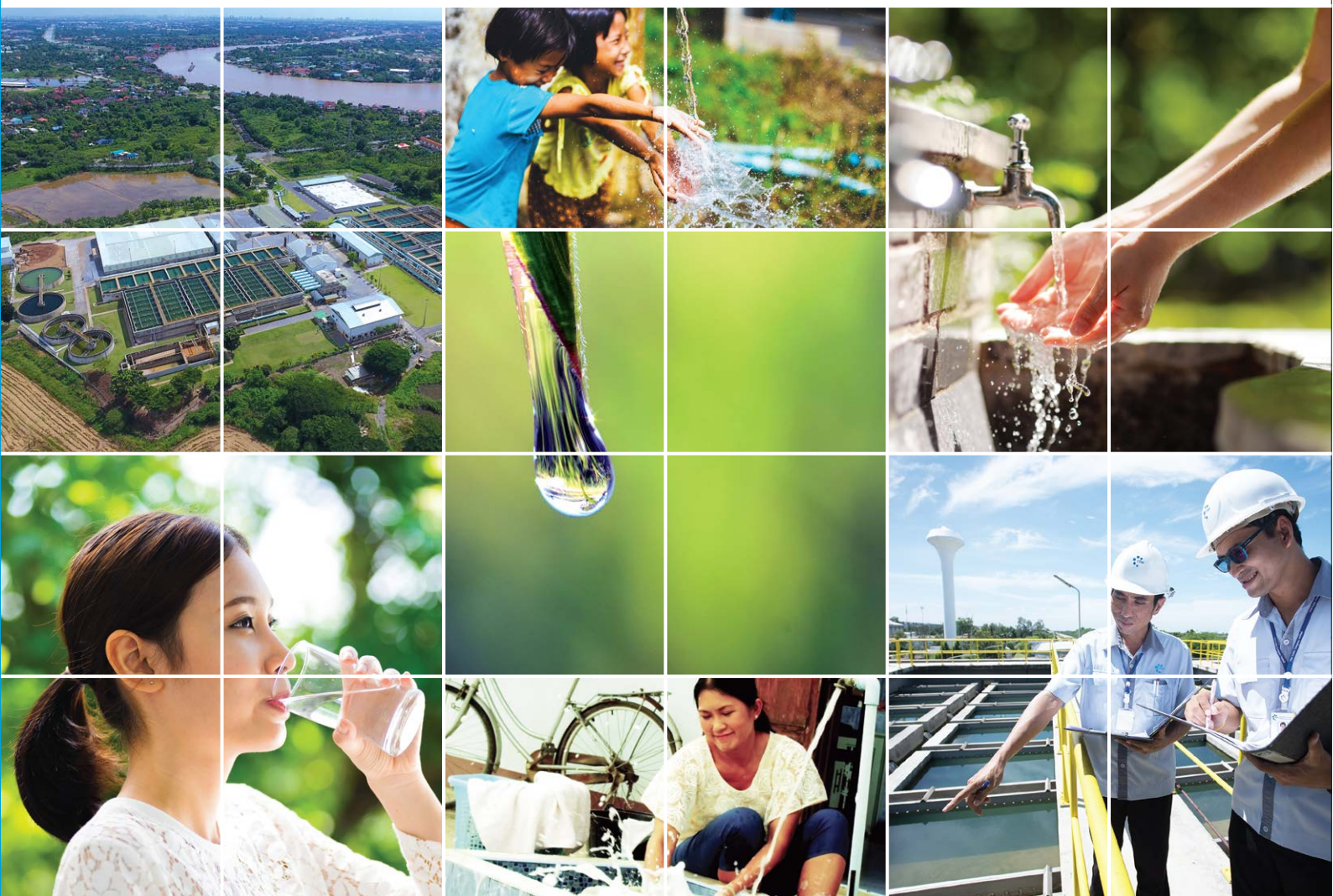




WATER FLOWS

LIFE GROWS

Annual Report 2018



TTW Public Company Limited





# WATER

Our business operations are  
**water management**  
under high quality international standard;  
**cleanliness, sufficiency**  
**and continuity;**  
and waste water treatment.



# ENERGY

We are aware of alternative environmental  
**friendly technology;**  
**be solar energy,**  
wind energy and biomass energy,  
as sustainably **renewable energy**  
and environmental conservation.

# ENVIRONMENT

Our business operation is  
**environmental friendly,**  
**being fully aware of**  
**environmental problems**  
with effective planning and control of the use of  
**natural resources.**



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the Board of Directors

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## Message from the Chairman of the Board of Directors

In 2019, it is projected the economic fluctuation will continue as Thailand will have general election for the first time in 5 years. However, TTW will continue our determination to operation the business carefully and to produce high quality tap water for all sectors of users in our service areas continually and efficiently.

It is evident that our business continual and sustainable growth is based on our constant search for knowledge, development efforts, corporate governance as well as efficient and transparent business operation. These factors have helped our Company to attain operational excellence and sustainability and to be able to provide returns to our shareholders as well as long-termed business expansion.

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The year 2018 was a period of time when economic fluctuation occurred both domestically and globally as a result of global economic instability, caused mainly by the US-Chinese trade conflict. However, this economic fluctuation did not affect TTW's operational performance, thanks to our determination to efficiently and carefully operate the business at all stages. It is evident that our business continual and sustainable growth is based on our constant search for knowledge, development efforts, corporate governance as well as efficient and transparent business operation. These factors have helped our Company to attain operational excellence and sustainability and to be able to provide returns to our shareholders as well as long-termed business expansion.

In addition to our business achievement, as evident by operational performance, TTW also highly recognizes our role as the producer of good quality, sufficient and continually-flow tap water for industrial, commercial and residential demands. We would like to expand our business in parallel with the country's economic growth and to participate in sustainable environmental conservation efforts. TTW has been regularly ranked by regulatory agencies and well recognized institutions as one of the top 100 companies, listed in the Stock Exchange of Thailand or the Environmental Social Governance (ESG100). Also, TTW has been selected as 1 of the top 45 listed companies or SET THIS Index, which by the Stock Exchange of Thailand. TTW has received good rating on corporate governance regularly by the Thai Institute of Directors and has been rated AA (Double A minus) by TRIS every year.

In 2019, it is projected the economic fluctuation will continue as Thailand will have general election for the first time in 5 years. However, TTW will continue our determination to operation the business carefully and to produce high quality tap water for all sectors of users in our service areas continually and efficiently.

On behalf of TTW Board of Directors, the management and employees, I would like to thank the shareholders, business allies, partners, customers, nearby communities and all supporters for your trust and supports through the past years. I also would like to assure that the Company will operate the business under the principle of corporate governance and responsibility for all stakeholders. Our goals are to create continual business growth and fair return to shareholders in parallel with the efforts to participate in community and social development as well as environmental conservation.



**Dr. Thanong Bidaya**

Chairman of the Board of Directors



## 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



## Significant Financial Information

(Unit : Million Baht)

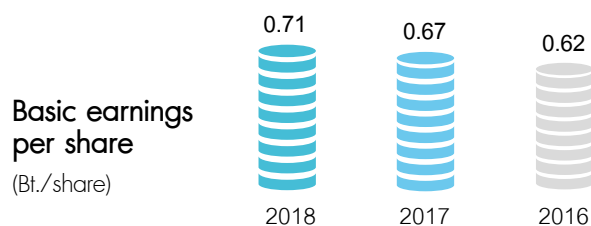
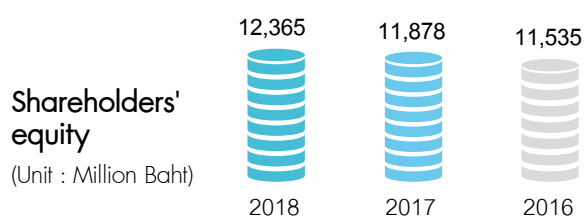
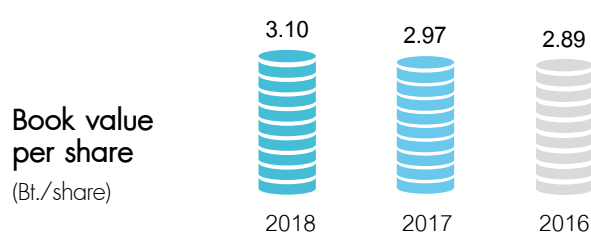
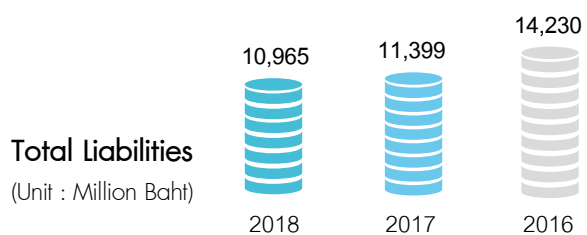
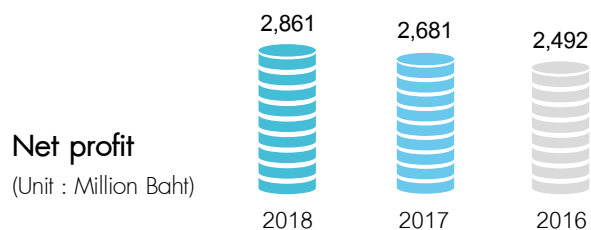
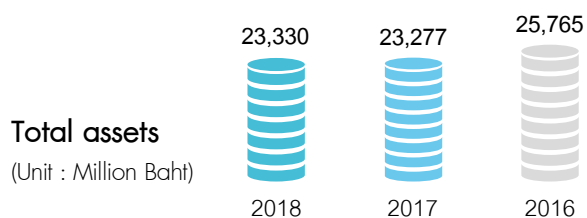
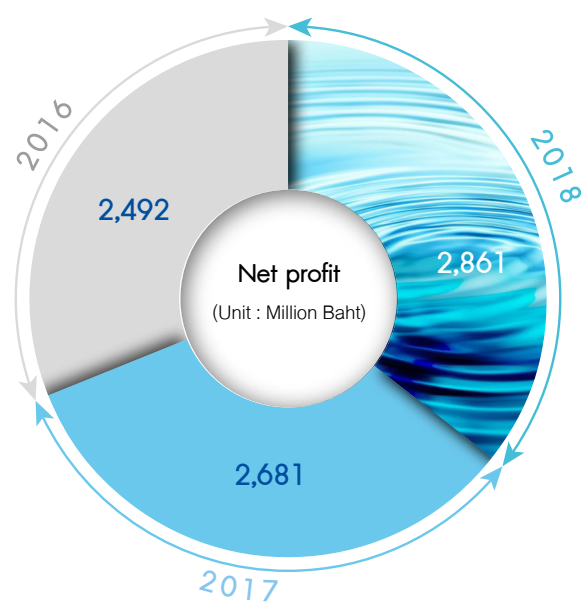
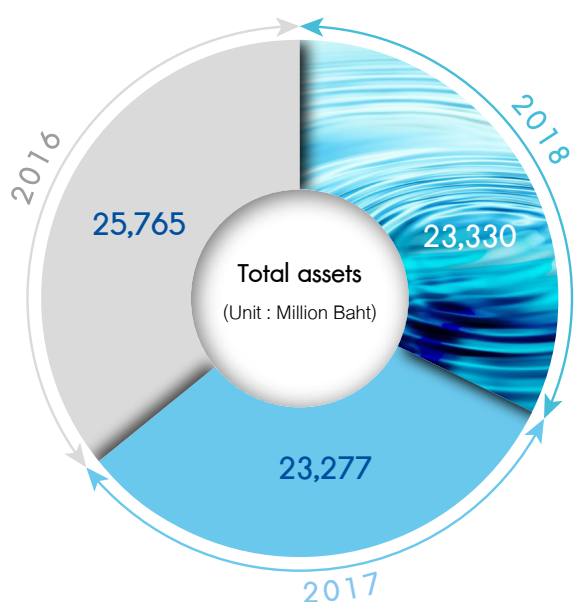
Description	Consolidated financial statements			Separate financial statements		
	For the year ended 31 December			For the year ended 31 December		
	2018	2017	2016	2018	2017	2016
Total assets	23,330	23,277	25,765	21,664	21,845	24,370
Total Liabilities	10,965	11,399	14,230	10,776	11,230	14,061
Shareholders' equity	12,365	11,878	11,535	10,888	10,615	10,309
Sales of treated water	5,807	5,474	5,270	3,975	3,772	3,624
Services income	118	121	109	42	43	37
total revenues	5,949	5,747	5,499	5,004	4,973	4,625
Cost of sales and services	1,722	1,564	1,497	1,011	925	904
Administrative expenses and management expense	280	257	244	230	199	196
Financial expenses	372	407	433	372	407	433
Income tax expenses	616	632	607	450	470	435
Gross margin	4,203	4,031	3,882	3,006	2,890	2,757
Net profit	2,861	2,681	2,492	2,667	2,700	2,391
Book value per share (Bt./share)	3.10	2.97	2.89	2.73	2.66	2.58
Basic earnings per share (Bt./share)	0.71	0.67	0.62	0.67	0.68	0.60

## Financial Ratio

Description	Consolidated financial statements			Separate financial statements		
	For the year ended 31 December			For the year ended 31 December		
	2018	2017	2016	2018	2017	2016
<b>Profitability ratios</b>						
Gross profit margin (%)	70.94	72.04	72.16	74.83	75.74	75.29
Net profit margin (%)	48.09	46.64	45.33	53.29	54.28	51.70
Return on equity (%)	23.14	22.57	21.61	24.49	25.43	23.20
<b>Efficiency ratio</b>						
Return on assets (%)	12.26	11.52	9.67	12.31	12.36	9.81
Return on fixed assets (%)	19.86	17.40	15.67	23.24	22.60	20.01
<b>Debt service coverage ratio</b>						
Debt / Equity (times)	0.89	0.96	1.23	0.99	1.06	1.36
Dividend Yield (%)	83.68	89.29	96.04	89.76	88.67	100.10

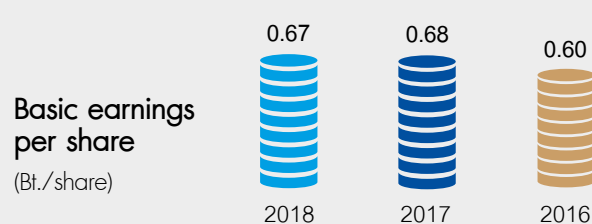
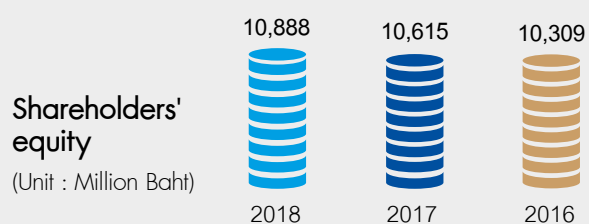
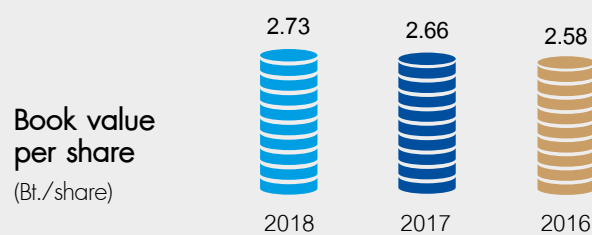
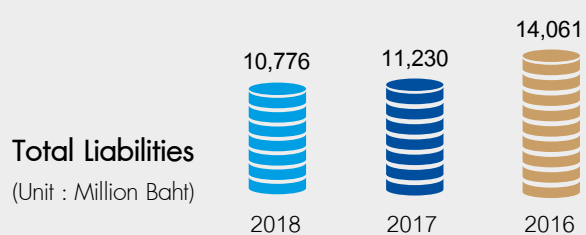
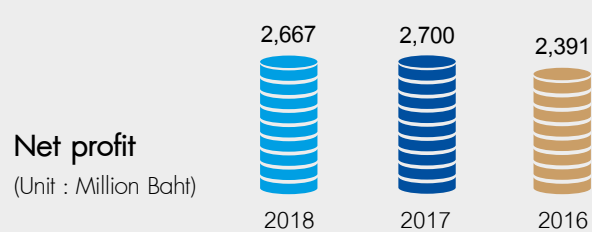
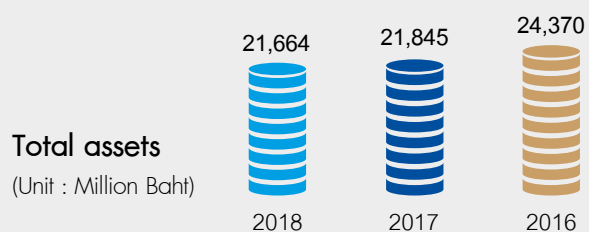
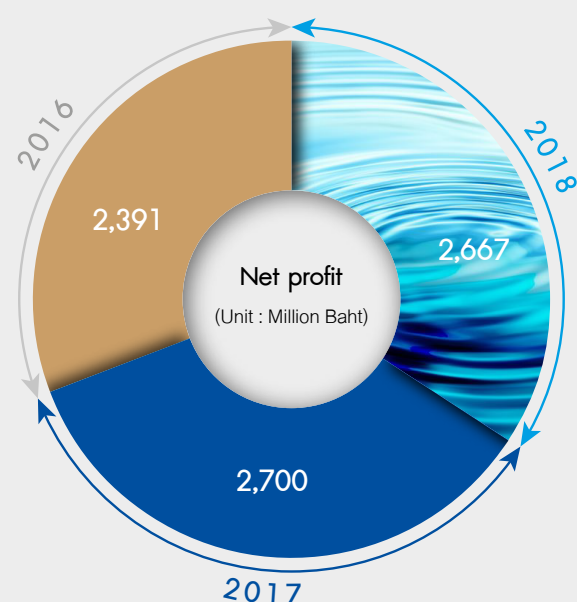
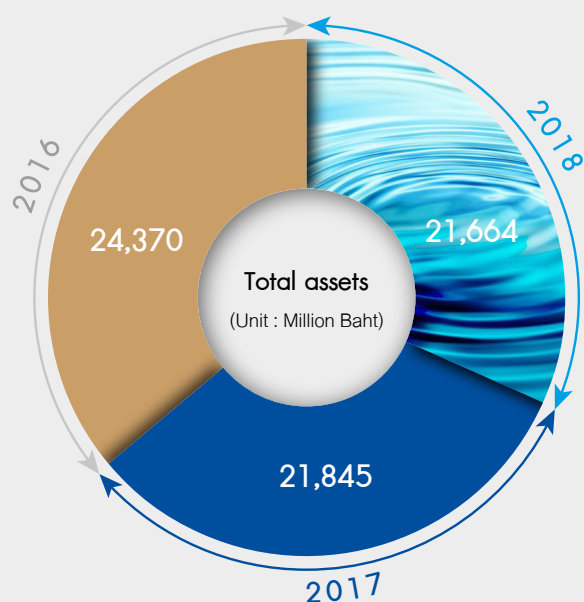
## Significant Financial Information

### Consolidated financial statements





## Separate financial statements



# Achievements



TTW has classified CG Scoring into the “Very Good” from Corporate Governance Report of Thai Listed Companies by Thai Institute of Directors Association (IOD).

The Company received an ESG 100 Certificate from Thaipat Institute for the 3<sup>rd</sup> consecutive year, in being 1 of 100 quality SET-listed companies (Resources companies) for achieving outstanding Operating performance with regards to environment social responsibility and governance practices.

TRIS Rating affirms the company rating and the senior unsecured debenture ratings of TTW at AA-



58 บริษัทที่อยู่ในรายการคำนวณดัชนีเอสจี

ADVANC	CPALL	KBANK	SCG
AOT	CPF	KCE	SPALI
BASF	CPH	KKP	SPRC
BCH	DELTA	KTG	TCAP
BCP	DTAC	LH	THANI
BCPG	EGCO	LPN	TISCO
BCMS	ERW	M	TMB
BEM	GLOW	MBK	TOP
BGRIM	GPSC	MINT	TPPP
BH	GULF	PSH	TU
BJS	HANA	PTTEP	TVO
BTS	HMPRO	PTTGC	VGI
CENTEL	INTUCH	ROBINS	
CK	IRPC	SCB	
COM7	IVL		

The Company received the “Thailand Sustainability Investment 2018” from the Stock Exchange of Thailand (SET) for the 3<sup>rd</sup> consecutive year. SET launched the record of listed companies with corporate sustainable development by selecting companies which have passed the criteria specified by economic, social and environment indicators.

The Stock Exchange of Thailand has created the SETTHSI Index for the purpose of indicating the price of sustainable companies that pass the market capital size and liquidity criteria. And TTW is the 1 of 45 listed companies with a list of “SET THSI Index”

TTW is the 1 of 58 listed companies with a list of “Thaipat ESG Index” in terms of outstanding operating performance with regards to the environment, social responsibility and governance practices.



TTW received “Sustainability Report Award” for the Outstanding Award of 2017 Sustainability report from Thaipat Institute.

The Company got 100 marks (full marks) for the 5<sup>th</sup> consecutive year from the Annual General Meeting Checklist (AGM Checklist), assessed by Thai Investors Association (TIA)

TTW received the “Thailand Top Company Award 2018” organized by Business+ and University of Thai Chamber of Commerce for the 2<sup>nd</sup> consecutive year.

## // General Information

### TTW Public Company Limited

SET Symbol	TTW
Registration Number	0107549000114
Head Office Address	30/130 Moo 12, Buddha Monthon 5 Road, Rai Khing, Sampran, Nakhon Pathom 73210
Business Category	Utilities business in the production and distribution of tap water
Registered Capital	3,990,000,000 Baht
Paid-up Capital	3,990,000,000 Baht
Divided into Common Stock	3,990,000,000 Shares
Par Value	1 Baht per share
First Trading day in SET	22 May, 2008
Website	<a href="http://www.ttwplc.com">http://www.ttwplc.com</a>
Contact	<b>Head Office</b> Telephone (+662) 019-9490-3, (+662) 019-9484-9 Facsimile (+662) 420-6064 <b>Corporate Affairs Division</b> <ul style="list-style-type: none"><li>• <b>Corporate Governance and Company Secretary</b> Tel (+662) 019-9484-9 Ext. 1106 e-mail : <a href="mailto:cg@ttwplc.com">cg@ttwplc.com</a></li><li>• <b>Investor Relation</b> Tel (+662) 019-9484-9 Ext. 1108 e-mail : <a href="mailto:ir@ttwplc.com">ir@ttwplc.com</a></li></ul>

### Reference Person

Auditor	: <b>EY Office Limited</b> 193/136-137, 33 <sup>th</sup> Floor, Lake Rajada Office Complex Rajadapisek Road, Klongtoey, Bangkok 10110 Tel (+662) 264-0777 (+662) 661-9190 Fax (+662) 264-0789-90
Legal Advisor	: <b>Offices of N&amp;K Ltd.</b> 990 Abdulrahim Place, 9 <sup>th</sup> Floor, Rama IV Road, Silom, Bangrak, Bangkok 10500 Tel (+662) 636-1111 Fax (+662) 636-0000



## // Nature of Business

### TTW Public Company Limited (TTW)

TTW is the operator of tap water production and distribution in response to the government's policy to provide the public with adequate, continuing and good quality supply of tap water to the public in lieu of groundwater and in order to prevent land subsidence and saltwater intrusions in groundwater. TTW the biggest private tap water producer in Thailand with the following major business contracts.

#### Water Purchase and Sale Agreement with PWA.

On 21 September 2000, TTW and PWA signed a contract in which PWA agreed to purchase tap water, produced by TTW in order to resell the water to consumers in Sam Phran, Nakhon Chai Si and Phutthamonthon Districts of Nakhon Pathom Province, as well as Krathum Baen and Mueang Districts of Samut Sakhon Province for a period of 30 years, starting from the date that TTW sold water to PWA according to the contract, i.e., 21 July 2004. The contract which will last until 20 July 2033 is called the Build-Own-Operate (BOO) under which TTW is the builder of water production and distribution facilities and the owner of such production and distribution facilities without having to transfer the facilities to the PWA. According to the contract, TTW must arrange to ensure the production capacity of 320,000 cubic meters per day and the Minimum Order Quantity (MOQ) that the PWA must purchase from TTW throughout the contract period is as follows.

Starting Point	Ending Point	MOQ (Cubic Meter/day)
21 July 2004	20 July 2006	200,000
21 July 2006	20 July 2008	250,000
21 July 2008	20 July 2034	300,000

Apart from the MOQ amount of tap water that the PWA is required to purchase from TTW as detailed above, the tap water supply contract also requires TTW to maintain and ensure that TTW tap water production capability must be adequate to supply minimum amount of tap water required to purchase at the time plus the 7% minimum amount of tap water that is required to be purchased at that time or plus 20,000 cubic meter/day of tap water, whichever amount is lower.

#### An Amendment to the Water Purchase and Sales Agreement with PWA.

TTW signed an amendment to the Water Purchase and Sales Agreement with PWA on 29 December 2008 in which the MOQ amount has been increased from 300,000 cubic meter/day to 354,000 cubic meter/day. In 2018, starting from 1 January to 31 December, the rate for 1-300,000 cubic meter or tap water shall be 28,931811 Baht/cubic meter and the amount exceeding 300,001 cubic meter shall be 12.20 Baht/cubic meter.

#### Tap Water Business Concession

TTW was granted a concession to engage in tap water production business from the Ministry of Natural Resources and Environment for 25 years, starting from 11 March 2005 to 10 March 2020. Under the concession, TTW shall produce and distribute tap water for the areas in 5 districts of 2 provinces as shown in the following table.

Province	District
Nakhon Pathom	Sam Phran, Nakhon Chai Si and Phutthamonthon
Samut Sakhon	Krathum Baen and Mueang Samut Sakhon

According to the provision in TTW Concession, TTW can produce and distribute tap water to anyone in the areas without limitation, e.g., PWA, Industrial Estate Authority and municipalities, etc., and TTW shall charge the tap water users at the rate, specified in the contract between TTW and PWA.

## Pathum Thani Water Co., Ltd. (PTW)

PTW has been incorporated to engage in tap water production for the Provincial Waterworks Authority (PWA). It was the first joint-venture project with private sector to produce tap water to replace groundwater in pursuance to the government's policy. PTW has entered into the following business contracts.

### A Contract to Produce and Supply Tap Water to the Provincial Waterworks Authority (PWA)

PTW has signed the Build-Own-Operate-Transfer (BOOT) contract with the Provincial Waterworks Authority (PWA) on 31 August 1995 in which PWA granted PTW the right to produce and distribute tap water in Pathum Thani-Rangsit areas of Pathum Thani Province for a period of 25 years, starting from the operation date, i.e., 15 October 1998 to 14 October 2023. Under this contract, PTW shall build tap water production and distribution system and shall transfer the ownership of distribution system to the PWA on the date that the operation started. And the ownership of tap water production system shall be transferred to PWA at 24.00 hr. of 14 October 2023 which is the end of the 25 year contractual period. However, PTW may request to lease the tap water production system from PWA in order to produce and distribute the tap water after the 25 year contract is ended by notifying the intent to PWA within the 24<sup>th</sup> year after the operation has started or at least 6 months before the transfer of tap water production system or between 15 October 2022 to 14 April 2023. PTW is entitled to lease the tap water production system from PWA 2 times at 10 year period each.

Under this contract, PTW was granted the right to distribute tap water supply at the amount of not more than 288,000 cubic meter/day and PWA will stop supply from other tap water sources to the consumers in Pathum Thani and Rangsit areas after the start of operation, i.e., 15 October 1998, except at a time when PWA projects that the demand for tap water in Pathum Thani and Rangsit areas would exceed 288,000 cubic meter/day. In such case, the PWA would be entitled to commence a project to supply that exceeding amount of tap water, either by itself or by other third party private supplier even though this contract has not yet terminated. However, the PWA shall be able to buy tap water from other sources or distribute tap water to the consumers at the exceeding amount only when the MOQ has reached 288,000 cubic meter/day. Therefore, at 15 days before the end of each year, PWA must set and notify the amount of MOQ that must not be lower than the MOQ of the previous year. In 2009, 2010, and 2016, the MOQ was 320,000 cubic meter/day, 330,000 cubic meter/day and 358,000 cubic meter/day, respectively (The total MOQ meets the requirement of the contract).

PTW pumps raw water from the Chao Phraya River to be used for the production of tap water in its production facility in Sam Khok District. The tap water supply would then be sent through the Bulk Transmission Main (BTM) to the 4 distribution stations, i.e., Rangsit Station, Thammasat Station, Pathum Thani Station and Muang Ake Village Station (Distribution officially started on 7 September 2015). Then, tap water from Rangsit Station, Thammasat Station and Muang Ake Village Station would be distributed to PWA's Rangsit Office and Klong Luang Office. The water from Pathum Thani Station would be distributed to PWA's Pathum Thani Office through the LDN main that belongs to PWA. The amount of water to be purchased in each month shall be measured by meter at the 4 distribution stations and the water charge rate is adjusted on 1 January of every year.

### Contract to Buy Additional Amount of Tap Water

On 15 September 2006, PWA and PTW signed a contract that increased the purchase additional amount of tap water supply by 70,000 cubic meter/day to be distributed to areas under the operation of PWA's Rangsit Office, using some assets from the Production and Distribution of Tap Water Contract. The expansion project was in response to an increasing daily demand for tap water. PTW invested in improving the raw water system, construction of tap water production system, booster pump station, improving distribution system and stations in order to increase production capacity by 100,000 cubic meter/day. On 1 August 2008, PTW started the production and distribution of tap water to PWA and this contract will end on 14 October 2023, the same time as that of the Production and Distribution of Tap Water Contract. The nature of the contract was the Build-Own-Operate-Transfer (BOOT).

### Tap Water Business Concession

PTW was granted a concession to operate tap water business by the Ministry of Interior (Currently, under the supervision of the Department of Natural Resources and Environment) for a period of 25 years, starting from 13 January 2000 to 12 January 2025. Under this concession, PTW was granted the right to produce and distribute tap water in the service area of Pathum Thani-Rangsit, Pathum Thani Province. The PTW shall charge the the PWA at the rate, specified in the Tap Water Production and Distribution Contract.

## Tap Water Production and Distribution System

### TTW Production System

TTW produces tap water by pumping raw water from the middle course of the Tha Chin River into tap water production process at TTW water treatment plant on the east side of the river at Bang Rakam Sub-District, Banglen District, Nakhon Pathom Province. The plant has installed and maximum production capacity of 320,000 cubic meter/day as of 31 December 2009 and since August 2010, the production capacity has been increased to 440,000 cubic meter/day. The company built the 2<sup>nd</sup> water treatment plant at Krathumbaen, located on Sethakit Road 1, Khlong Maduea Sub-District, Krathumbaen District, Samut Sakhon Province which was intended to be used as a secondary plant with a production capacity of 100,000 cubic meter/day. The two plants have a combined production capacity of 540,000 cubic meter/day.

The production process at the water treatment plants, the distribution of tap water to both water treatment plants and the tap water distribution process to the PWA is controlled by the Supervisory Control and Data Acquisition (SCADA) System which is able to control water production and distribution to distribution stations efficiently. Such system is installed in a control building which is located separately from the tap water production plant.

The quality of tap water, produced and distributed by TTW meets standard criteria, prescribed in the Water Purchase and Sales Agreement with PWA and the Thai Industrial Standard of the Thai Industrial Standard Institute, the Ministry of Industry. To ensure that the quality of the tap water meets these standards, TTW conducts the test on water quality at all steps of production, starting from the adding of chemical solvent until the sludge dewatering and the distribution of tap water from the water production plant. With efficient and skillful production, tap water, produced by TTW always meets the standard, prescribed by the PWA ever since the starting of operation on 5 January 2004 until present and in pursuance to the Thai Industrial Standard 257, Vol. 1-2521.

### The Distribution of Tap Water to Distribution Stations

Tap water, produced by TTW will be distributed to the following 2 distribution stations

#### 1. Phutthamonthon Distribution Station

Phutthamonthon Distribution Station is located on Phutthamonthon 5 Road, Rai Khing Sub-district, Sam Phran District, Nakhon Pathom Province. It has 2 storage tanks with the capacity of 50,000 cubic meter and 5 pumps, with pumping capacity of 2,569 cubic meter/hr/unit in the 1<sup>st</sup> pumping set and 5 pumps with pumping capacity of 1,530 cubic meter/hr/unit in the 2<sup>nd</sup> pumping set to pump water to the Krathumbaen Booster Station and Mahachai Distribution Station.

#### 2. Mahachai Distribution Station

Mahachai Distribution Station is located at Mueang Samut Sakhon District of Samut Sakhon Province and has 2 storage tanks with the capacity of 30,000 cubic meter and 4 pumps with pumping capacity of 2,664 cubic meter/hr/unit to distribute tap water to Samut Sakhon Water Distribution station.

Both distribution stations has the water distribution control plant that pumps water through a series of water gauge to record the quantity of water, distributed to PWA. The two stations also have pressure control tank to prevent the occurrence of vacuum in water distribution pipe and deformity caused by resonance frequency.

## Tap water Distribution System

### Bulk Trunk Main (BTM)

This is a 51 kms. tap water distribution system from TTW's 2 tap water treatment plants.

- Tap water distribution system from tap water treatment plant to Khlong Yong booster station. The system comprises the main pipe with 1,500 mm.(1.5 meter) in diameter and the total length of 17 kms.
- Tap water distribution system at Khlong Yong booster station whose main pipe is 1,500 mm.(1.5 meter) in diameter and the total length of 12 kms.
- Tap water distribution system from Buddha Monthon Distribution Distribution Station to Krathum Baen booster station. The system comprises the main pipe with 1,000 mm.(1.0 meter) in diameter and the total length of 14 kms.
- Tap water distribution system at Krathum Baen booster station whose main pipe is 1,000 mm.(1.0 meter) in diameter and the total length of 7 kms.

### Local Distribution Network (LDN)

This is a tap water distribution piping network from both of TTW water distribution stations to PWA and the water users. The total length of the net work is 113 kilometers. Each point of LDN is linked by the valve pond that consists pressure control equipment that links the LDN and PWA's service piping network. All of the valve ponds and pressure control equipment in 43 points are TTW's assets.



TTW has paid for the lease of land where the bulk transmission main (BTM) and local distribution network (LDN) are laid to the Department of Highways every year according to the lease agreement. The lease fee is subject to an increase of 15% in every 5 years according to the condition, prescribed by the Department of Highways. In 2018, the total lease fee that TTW had to pay was 33.68 million Baht of which 27.87 million Baht was for the lease of water treatment plant in Banglen and 5.81 million Baht for the second water treatment plant in Krathumbaen.

## Quality of Tap Water

The quality of tap water, produced and distributed by TTW meets standard criteria, prescribed in the Water Purchase and Sales Agreement with PWA and the Thai Industrial Standard of the Thai Industrial Standard Institute, the Ministry of Industry.

To ensure that the quality of the tap water meets these standards, TTW conducts the test on water quality at all steps of production, starting from the adding of chemical solvent until the sludge dewatering and the distribution of tap water from the water production plant. Moreover, samples of water were also sent to be examined by the Health Department of the Ministry of Public Health at least once a month from the start of operation on 5 January 2004 until present.

## PTW Water Production System

PTW water treatment plant is located in an area of 46 Rai at Ban Pathum Sub-District, Sam Khok District, Pathum Thani Province. Initially, the plant had the installed production capacity of the plant was 288,000 cubic meter/day. PTW increased the production capacity for the first time to 100,000 cubic meter/day in 2008 and in 2015, the initial production capacity has been increased to 57,000 cubic meter/day and the maximum production capacity to 100,000 cubic meter/day. As a result, the current production capacity is 488,000 cubic meter/day.

## Tap Water Transmission System to Water Distribution Stations

The tap water is pumped and transmitted to 4 following water distribution stations.

- (1) Thammasat Water Distribution Station which comprises 30,000 cubic meter storage structure with 3 units of 4,010 cubic meter/hr. pumps which are driven by the 630 kw., motors. The station distribute tap water to PWA Khlong Luang Distribution System and some areas under PWA's Ayutthaya Office from where the tap water is further distributed to the users in the areas of Khlong Luang District and some areas in Ayutthaya province.
- (2) Rangsit Water Distribution Station comprises 30,000 cubic meter storage structure with 3 units of 4,010 cubic meter/hr. pumps which are driven by the 630 kw., motors. The station distribute tap water to PWA Rangsit Distribution Station from where the tap water is further distributed to the users in the areas of Thanyaburi District and Lam Luk Ka District.
- (3) Pathum Thani Water Distribution station comprises 24,000 cubic meter storage structure with 3 units of 2,880 cubic meter/hr. pumps which are driven by the 355 kw., motors. The station distribute tap water to PWA Pathum Thani Distribution System from where the tap water is further distributed to the users in the areas of Mueang District, Sam Khok District and Lard Lum Kaew District.
- (4) Muang Ake Water Distribution Station comprises 10,000 cubic meter storage structure with 5 units of 2,880 cubic meter/hr. pumps which are driven by the 315 kw., motors. The station distribute tap water to some areas under PWA Rangsit Distribution System so that it could transmit more water to the areas of Khlong 4-5 of Khlong Luang area. Muang Ake Water Distribution Station distributes tap water to users in Lak Hok Sub-District, Ban Mai Sub-District, Bang Phoon Sub-District, Mueang District, Pathum Thani province.

All four of PWA's water distribution stations have installed a set of equipment to control the level of distribution pressure to be in proper balance with water quantity, required in the distribution areas. The water is distributed through a series of water gauge that record the amount of water, distributed to PWA, the same way it does to TTW. However, the areas under the responsibility of PTW covers the water gauge installed in the water distribution only.

## Tap Water Transmission System Bulk Transmission Main (BTM)

This 33.78 Kilometer-long water transmission system transmits tap water from water treatment plant to the company's following 4 water distribution stations.

- a. To Rangsit Distribution Station. The system comprises 3 mains of different sizes, i.e., 1,500 mm., which spans for 2.35 Kms., 1,200 mm., which spans for 2.57 Kms., and 1,000 mm. which spans for 8.31 Kms.

- b. To Thammasat Distribution Station. The system comprises 3 mains of different sizes, i.e., 1,500 mm., which spans for 2.35 Kms., 1,200 mm., which spans for 2.57 Kms., and 1,000 mm which spans for 0.63 Km.
- c. To Pathum Thani Distribution Station. The system comprises the 600 mm. main which spans for 0.45 Km. under the Chao Phraya River and connects to the 700 mm. main for a span of 0.55 Km.
- d. To Muang Distribution Station which is located inside the Pathum Thani Water Treatment Plant. The system comprises the 800 mm. main which spans for 14 Kms.

## Local Distribution Network (LDN)

This is a tap water distribution system that transmits water to 4 of PWA's water distribution stations according to the Water Production and Distribution Contract between PTW and PWA. All of distribution systems built by PTW would be transferred under the ownership of PWA on the start of operation or on 15 October 1998. Therefore, the PTW water distribution systems that comprise some of the water distribution mains, including the valve pond are transferred to be the assets of PWA.

## Marketing and Competition

### Nature of Customers and Channel of Distribution

#### TTW

TTW has only one customer, PWA who purchase tap water from both of TTW's water distribution at Buddha Monthon and Mahachai. PWA distribute the water to users through distribution and service mains. The quantity of water that TTW sells to PWA is measured at the main meter at the distribution points, located at both distribution stations.

TTW calculates the actual amount of water it sold to PWA each month. PWA pays for the difference from average value of tap water quantity that actually delivered to MOQ for such period of time. PWA shall pay additional quantity of water to TTW, based on the tap water rate, multiplied by the aforementioned different amount every six month, which falls on January and July of every year.

#### PTW

PTW produces and distributes tap water for PWA who purchases tap water from all of PTW's 4 water distribution stations, i.e., Pathum Thani, Rangsit, Thammasat and Muang Ake Stations to sell the tap water to users in the service areas of Pathum Thani-Rangsit.

PTW calculates the actual amount of water it sold to PWA each month. PWA pays for the difference from average value of tap water quantity that actually delivered to MOQ for such period of time. PWA shall pay additional quantity of water to PTW, based on the tap water rate, multiplied by the aforementioned different amount every 12 month (From 15 October to 14 October every year).

## Demand for Tap Water in the Areas

### Population Growth

Growth in population resulted in higher demand of tap water for consumption and usage. Nakhon Pathom and Samut Sakhon are outer areas of Bangkok where urbanization is continually expanded. In 2018, the total population in Nakhon Pathom and Samut Sakhon is 1.49 million, an increase of 13% from 2008.

The Pathum Thani and Rangsit area in Pathum Thani Province is an area adjacent to Bangkok which has grown to be a more densely populated and urbanized area. In 2018, Pathum Thani has a total population of about 1.16 million, an increase of 25% from 2008.

## Demand for Tap Water in Nakhon Pathom and Samut Sakhon Provinces

The basin areas along Tha Chin River is 1 of the top 5 areas with highest demand for tap water for consumption. The total area of the Tha Chin basin is 13,681 Sq. kms, covering 11 provinces, namely, Uthai Thani, Chai Nat, Suphan Buri, Nakhon Pathom, Samut Sakhon, Kanchanaburi, Ang Thong, Ayutthaya, Pathum Thani, Nontha Buri and Bangkok. The area also comprises 3 sub-basin areas, i.e., Huay Khun Kaew, Huay Krasiew and Tha Chin River Basin.

The suburban areas around Bangkok have seen rapid growth in population, residential and industrial areas, the Department of Water Resource gives special priority to the need to provide adequate tap water to meet the demand in those areas. The finding of a study, conducted by the Team Consulting Co., Ltd., forecast the expected amount of water consumption by users in these service areas until 2034 will be about 800,000 cubic meter/day.

Industrial sector is the main water user in the service areas of TTW. The data collected in 2018 indicated that the proportion of industrial tap water users is 45% of total amount of tap water that TTW distributed, followed by commercial users and household users whose proportion of water usage were 16% and 39%, respectively.

The main factor that drives an increase in tap water usage in these service areas is, therefore, the production activities of industrial sector. TTW, therefore, recognizes the importance of stepping up its marketing campaign and the effort to educate tap water users in industrial sector to realize the long term benefit of tap water usage. TTW and PWA joined hands to arrange meetings with tap water users in industrial sector through different activities in order to express the gratitude to the tap water users on regular basis.

## Demand for Tap Water in Pathum Thani-Rangsit Areas

The result of a study on tap water demand in Pathum Thani-Rangsit area, conducted by the Team Consulting Co., Ltd., indicated that the area where an increase in tap water demand was highest was Lam Luk Ka District which is located in the area where Pathum Thani and Bangkok are connected. At present, the Green Line electric railway which is being constructed to connect Moh Chit, Saphan Mai, Khu Khot and Lum Luk Ka District will result in rapid development in real estate development projects along the railway line. It is projected also that the population in Lum Luk Ka District will also grow. Moreover, after the completion of the Bang Sue-Rangsit Red Line electric railway construction, the demand for tap water in Khlong Luang District will also increase.

Based on the statistical data on PTW tap water consumption in Pathum Thani-Rangsit area, household consumption is the highest at 59%, followed by industrial consumption at 22% and commercial consumption at 19%.

## Strategies and Competition

Tap water is a necessary basic consumer goods for a living. In 2018, the country's largest tap water producers, the Metropolitan Waterworks Authority produced an amount of 1,997 million cubic meter of tap water while the Provincial Waterworks Authority (PWA) produced a total of 1,827 million cubic meter. TTW and PTW are the largest private producer and distributor of tap water for PWA. In 2018, the total amount of tap water that TTW and PTW produced and distributed to PWA was 304 million cubic meter or 17% of PWA's total production amount or 72% of total amount of tap water produced by all private producers.

## TTW Public Company Limited

TTW was granted a concession to engage in the production and distribution of tap water for West Bangkok which is an area where the demand for tap water and the density of population are high. The area also has a lot of industrial plants. These factors, in coupled with the government's policy to promote the use of tap water as an alternative to underground water, led to a continually increase in total sales of TTW tap water since the month of January 2004.

- **Production Strategies**

TTW employs foreign-imported tap water production technology which is efficient and modern. The "Leopold" filters are installed, making the filter tank to be durable than the sand filter tanks that are generally used. This filter system also help save water, required for washing the filter tanks. The use of Leopold filter in place of gravel filter and nozzle made the distribution of water and air circulation more thoroughly while filtering from the top layer and in backwash process. Also, the use of Leopold helped gotten rid of the sand and gravel mix issue during backwash and the need to change sand and gravel layers. The use of Leopold also help save more water and air during the backwash than the use of sand and gravel filters. All of TTW's water production and distribution activities are controlled by the Supervisory Control and Data Acquisition (SCADA) System which a modern and efficient computerized management system. TTW also assigned personnel to control production activities 24 hours and built employees' dormitory inside the compound of TTW water treatment plant to ensure that the production process is operated continually and efficiently and an incident occurred, the production control staffers could promptly address the problem. With the production capacity of 440,000 cubic meter/day and the BTM main network with the span of 51 kilometers and LDN system, made of steel high density polyethylene pipes, the distribution main system can withstand very high water pressure. Moreover, all distribution points, connecting with PWA network were designed and constructed as valve ponds which enabled easy and effective inspection of leaks and maintenance works.

TTW also built the second water treatment plant at Krathumbaen District of Samut Sakhon Province. This plant has production capacity of 100,000 cubic meter/day. The TTW's total production capacity of 540,000 cubic meter/day could meet the demand of tap water users in the areas of Samut Sakhon and Nakhon Pathom provinces adequately without interruption. TTW also



installed Ultra-Filtration system the Krathumbaen tap water production plant. The construction of Krathumbaen Plant was designed to prevent the risk that may occur from having only one water production plant in Banglen District. In case that Banglen plant is unable to produce the water, Krathumbaen plant could be used as the back-up plant to produce tap water for PWA.

- **Service Area Expansion Strategies**

TTW sees good business opportunity if it builds tap water distribution main network that covers main streets in its tap water distribution areas and major communities with high demand for tap water. For example, TTW has distribution main networks that cover areas along such main roads as Petch Kasem, Buddha Monthon Sai 4, 5, 7 and Borm Rachchonnee in Nakhon Pathom Province and Sethakit, Rama 2 and Ekachai Roads in Samut Sakhon Province. When combining with PWA's water distribution network, TTW network covers a large economic area. Moreover, TTW also joined hands with PWA to survey many areas in order to plan for the improvement of tap water distribution efficiency in areas where tap water pressure is low and where the demand is high.

TTW has a plan to improve 2 booster stations, i.e., Khlong Yong Booster Station and Krathumbaen Booster Station to become water distribution stations in the future with a view to increasing the tap water distribution capability to high potential and high demand service areas.

- **Public Relations Strategies**

In recognition of the importance of water users, TTW implemented the following activities foster good relations with them.

- (1) TTW regularly scheduled meetings with PWA with a view to following up on the PWA's plan to expand tap water distribution areas in order to use the obtained information to develop marketing plan and to provide appropriate supports to the activities of PWA for target potential customers who are to become new customers in the future. The goals were to increase the number of new water users and amount of tap water in target areas. The activities included public relations campaigns in the communities to recruit new users and other activities organized by PWA to provide field services in target communities such as the registration of tap water users, inspection of water leaks inside the houses or buildings, etc.
- (2) Met with indirect tap water users, including target customers who were new tap water users and were expected to be major users in the future in both industrial and commercial sectors. The goals were to create confidence and to ensure that TTW's tap water was clean and the supply was adequate and uninterrupted. The meeting was also to learn about the problems and obstacles in using tap water in their business operations. The Company also conducted appropriate sales promotion activities, such as the support on the request to improve tap water distribution mains and meter for the users in order to increase the number of tap water users.
- (3) Communicated through various media channels such as email or SMS with the PWA, tap water users or the business operators in the event of repair or maintenance of tap water distribution mains that may affect the distribution of water to the uses and to lessen the impacts that may occur to production process or services.
- (4) The provision of information must depend on modern technology such as new media. The learning and application of public relations tools are the most important parts in effective communications.
- (5) Fostered good relationship with members of the mass media such as reporters or journalists because they could help disseminate information about the Company to the public in general.

- **Service Quality Creating Strategies**

TTW strongly believes that tap water operator should not only the produce good quality tap water but also provide good service which includes the distribution of tap water in adequate quantity and with proper pressure as well as continuity of services. Followings are some of the good quality services provided by TTW in 2018.

- (1) The quality and cleanliness of the tap water met the Industrial Standard 257, Part 1-2521 100%.
- (2) Sufficient water pressure at the end of tap water distribution pipes at not less than 27 meters. Water 100%
- (3) The continuous flow of tap water distribution is not less than 99.94%

TTW also cooperated with PWA to organize meetings with large industrial and commercial tap water users regularly in order to get views and recommendations to improve the quality of goods and services, to build trust, to increase total sales of tap water in service areas and to foster good relationship with tap water users. Moreover, TTW also organized other activities to express gratitude to tap water users.

- **Quality Control and Examination**

TTW regards the importance of the good quality of tap water and services that we provide to PWA and tap water consumers. Apart from close control on the quality of water at all steps of production, TTW also provided cooperation to PWA in the examination

of water samples, collected from water users in each service areas in TLAA laboratories to ensure that the quality of tap water, distributed to downstream users is consistent with that of the water produced by TTW. At the same time, TTW also provided advices to the water users who requested us to examine the quality of downstream water free of charge. This is because we believe that “Good Quality Tap Water Brings Better Quality of Life”.

- **Cost Management Strategy**

With modern production technology installed, TTW is able to efficiently produce tap water. By using modern filtration technology and gravity to help sedimentation process without using electrical power to circulate the water, TTW has been able to effectively maintain the cost of production at manageable level. Moreover, TTW also have a subsidiary, TWO to operate as a maintenance unit of operation that enable TTW to control maintenance works without having to outsource them.

- **Water Demand Monitoring**

In foreseeing the future business opportunity, TTW has hired the Team Consulting Engineering and Management Co., Ltd., to provide engineering consultancy and to conduct a study on future demand for tap water in TTW service areas until the year 2034. The consulting company also conducted a study on potential service areas in the future and developed a plan to improve production, distribution and transmission systems. As for the assessment of actual water distribution, TTW conducted the study to get information on actual water pressure and flow of tap water in LDN distribution system by using the Hydraulic Model. The results of the study enabled TTW to effectively plan and manage the distribution system with sufficient water pressure and flow that cover all service areas.

## **PTW**

PTW was granted a concession to produce tap water for users in service area of Pathum Thani-Rangsit in Pathum Thani Province, a growing area adjacent to Bangkok where number of water users in commercial, business, industrial, educational and residential sectors are continually increasing. In couple with the government’s policy to promote the use of tap water as an alternative to groundwater, the amount of tap water sales has also continually increased.

- **Production Strategy**

PTW installed “SCADA System” technology to automatically control production process through telecommunications system at all of its water treatment plants and distribution stations. The SCADA System is installed in the control building. PTW also installed water quality control system in which raw water is examined by Jar Test system twice a week in order to verify the proper content of chemical substances, required for the production of tap water.

For sand filtration tank, PTW installed the backwash process, using air nozzle, installed all over the cross sectional area underneath the sand filtration layer of the filter tank. The process uses air pressure to help clean up dirty residue, mixed in the sand filter layer.

PTW assigns staffers to control production process 24 hours a day. The Company has also improved distribution system of the water treatment plants by using the newly built water reservoir inside the water treatment plant to distribute tap water to Pathum Thani Distribution Station in order to be able to distribute greater amount of tap water to Rangsit and Thammasat Distribution Stations.

- **Service Areas Strategies**

PTW determined to respond to the tap water demand of users in Pathum Thani Province which has been increasing rapidly and continually. PTW also discussed with PWA regularly to the schedule in order to find ways to improve the efficiency of services.

## **Products and Services**

### **TTW Production Technology**

TTW uses water production technology from England and the Company’s staffers have knowledge and expertise in tap water production process that meet international standard. The modern technology used by TTW is the Supervisory Control and Data Acquisition (SCADA) which is a computerized system, used for the automatically control of tap water production and distribution process. As a result, tap water produced by TTW always meets the TIS 257 Parts 1-2521, the standard, prescribed by the PWA.

TTW’s tap water production process has been designed with a view to attain maximum saving on production cost. The design is based on the principle of “Gravity Flow” in which the raw water is pumped up to raw water pumping station and is released to flow down by gravity through the rapid mixing tank, sedimentation, filtration and chlorine mixture processes before being sent to the water storage process. These process help save the production cost.

#### Average Quantity of Tap Water Produced by TTW during 2016-2018

Unit: Cubic Meter/Day

Detail	2016	2017	2018
Production Capacity	440,000	440,000	540,000
Average Water Sales Volume	378,165	399,714	433,631
Utilization of Production (%)	85.9%	90.8%	80.30%

In 2018, TTW distributed an average amount of water at 433,631 cubic meter/day and the total amount of distribution was higher than that in 2017 due to an increase of 2% of tap water distributed for residential usage by PWA and tap water was distributed by TTW to the areas under the distribution of PWA's Photharam Water Treatment Plant.

### Production Process

The water source for production of tap water by TTW is the area in middle course of Tha Chin River. The raw water in natural source in general is contaminated with physical, chemical and biological substances and not proper for production of tap water. Followings are processes used in the production of drinkable tap water.

- There must be no micro-organism in tap water in the production and transmission of tap water through pipe system and to the faucets of users.
- Must not contain any bio-organism, suspended or mixed in tap water, transmitted through the pipes until it reaches the faucet of the users.
- All of the gases, diluted in the water must be removed from tap water.
- Must remove contaminated substances that are either suspended or mixed in tap water.
- All unwanted contaminating substances that may cause harm or instant or chronic condition to human such as Cadmium, lead, Phenol and Cyanide must be removed out of the tap water.
- Must remove unwanted substances from the tap water as much as possible. Tap water must not have smell or taste unwanted by the consumers.
- Tap water must be treated well so it can satisfy the needs for drinking, cleaning and industrial purposes by the users.

### PTW Production Technology

The technology, used by PTW to produce tap water is similar to that of TTW, i.e., all production steps are controlled by SCADA System which is an automatic system, operated through tele-communications system. Moreover, the system to obtain or pump raw water into the treatment plant has the capacity of 500,000 cubic meter/day.

#### Average Quantity of Tap Water Produced by PTW during 2016-2018

Unit: Cubic meter/day

Detail	2016	2017	2018
Maximum Production Capacity	488,000	488,000	488,000
Average Water Sales Volume	359,036	372,065	399,806
Utilization of Production Capacity Used (%)	73.57%	76.24%	81.93%



In 2018, PTW distributed an average amount of water at 399,806 cubic meter/day and the total amount of distribution was higher than that in 2017 due to an increase of 5% of tap water distributed for residential usage by PWA and tap water was distributed by TTW to the areas under the distribution of PWA's Wat Chai Water Treatment Plant.

## Production Process

PTW tap water production process has identical procedures as that of TTW.

## Raw Material and Suppliers

Followings are raw material used in the production of TTW.

(a) Raw water that TTW uses for the production of tap water is from Tha Chin River which is pumped to the water treatment plant in Bang Ra Kum Sub-District, Banglen District, Nakhon Pathom Province without any cost, except for the 200 Baht/year concession fee.

(b) Main chemical substances

- Liquid alum
- Potassium permanganate
- Liquid chlorine
- Polyelectrolyte
- Lime

TTW purchases raw material from diverse suppliers by choosing only manufacturers whose products meet the standard, issued by TTW chemical laboratory and are able to deliver and reserve enough goods to meet TTW demand promptly and at low prices.

As the most important chemical substance required for the production of tap water, the total purchase of lime is the highest, compare with other chemical raw material, TTW buys lime from several domestic suppliers and since it is a raw material without strict specification, if the supply is not available by the regular suppliers, TTW could easily buy it from other suppliers.

## Raw Material and Suppliers

Followings are raw material used in the production of PTW.

(a) Raw water that TTW uses for the production of tap water is from Chao Phraya River which is pumped to the water treatment plant in Ban Pathum Sub-District, Sam Khok District, Pathum Thani Province. PTW pays 200 Baht/year concession fee.

(b) Main chemical substances used by PTW

- Liquid alum
- Liquid chlorine
- Polyelectrolyte
- Lime

PTW doesn't use potassium permanganate in the tap water production process because the nature of raw water from Chao Phraya River is different from the water from Tha Chin River. Raw water from Tha Chin River is composed of certain chemicals that cause the water to have color and potassium permanganate help remove that color.

## Environmental Impacts

TTW strongly recognizes the importance of environmental conservation. However, the tap water production process create sludge which is treated by the sludge dewatering process in which polyelectrolyte is used to create sludge before being discharged at the dumping area, prepared by TTW. The treated water acquired from the sludge dewatering process is recycled into the tap water treatment system through the "Zero Discharge". TTW examines the sludge regularly every year by laboratory with certified standard.

While the amount of tap water to be produced in the future has been projected to increase, the amount of the left-over sludge would also increase. In recognition of its social and environmental responsibility, TTW has joined hands with the Laem Phak Bia Environmental Research and Study Project Under the Royal Initiative and the Environmental Science Department of the Faculty of Environment, Kasetsart University to conduct a study on how to use the sludge, left-over from the tap water production process as a raw material for creating the shared value (CSV) in nearby communities.

As a result of the study project to create added value to the left over sludge, in 2018, TTW used it as the raw material to produce fertilizer for Suphan Buri 1 rice field and young corn and brick and stick charcoal manufacturing. The project was jointly implemented by communities around TTW's Banglen Treatment Plant.

TTW also strictly complies with environment-related laws and support the government and local environmental agencies such as the Environment Office Region 5, the Ministry of Natural Resources and Environment, Nakhon Pathom Province and the Love Tha Chin River Club to implement sustainable development and water conservation project in order to keep the quality of water in Tha Chin River in good condition. And so far, TTW never have any dispute or legal charge relating to environment case.

PTW also recognizes the importance of environmental conservation. PTW uses Zero Discharge system in which no water is discharged back into raw water source. The Company recycle the treated water, left over from the sludge dewatering process back into the tap water production.

In 2018, the Company applies the results of research on how to use the sludge left over from water production process as raw material to produce fluoride absorbent, interlocking brick block, floor tiles and wall tiles, using construction material such as interlocking brick, floor and wall as raw material in CSR project. One project was the construction of school building at Wat Ratchdhammaram School in Na Khok Sub-District, Mueang District, Samut Sakhon Province under the School Children Quality of Life Promotion Project 2018 of the Office of the Deputy Prime Minister, General Prajin Jantong. And so far, PTW also never have any dispute or legal charge relating to environment case.

## TTW Long-termed Business Plan

TTW has a business plan that comprehensively cover water production business as follows;

### Tap water related investment

According to the 20 Year National Strategy and the National Water Resource Development Master Plan, the Thai government has the policy to promote private joint-ventured investment projects. To achieve the plan, the government has improved and issued several legislations such as the Private Investments in State Undertakings Act and the East Economic Corridor Act, etc. The Company also explored opportunity to invest in the government-promoted projects and to develop investment opportunities in cooperation with the Provincial Waterworks Authority. The plan is to increase new service areas and total sales of tap water in response to the country's sustainable development plans.

### Waste Water Treatment Projects in Communities

According to information in the Community Waste Water Treatment Master Plan 2017-2026 of the Department of Pollution Control, the total amount of waste water in the communities nationwide in 2018 was 10 million cubic meter/day while the country's maximum waste water treatment capability was 3.2 cubic meter/day or about 32%. Most of the waste water treatment projects are handled by local administrative organizations that normally have insufficient budget and resources to drive the project in long term. TTW, therefore, participated in the projects by using the Company's expertise and financial strength to develop business opportunities in community waste water treatment investment project and the opportunity to expand service in the country's industrial estates.

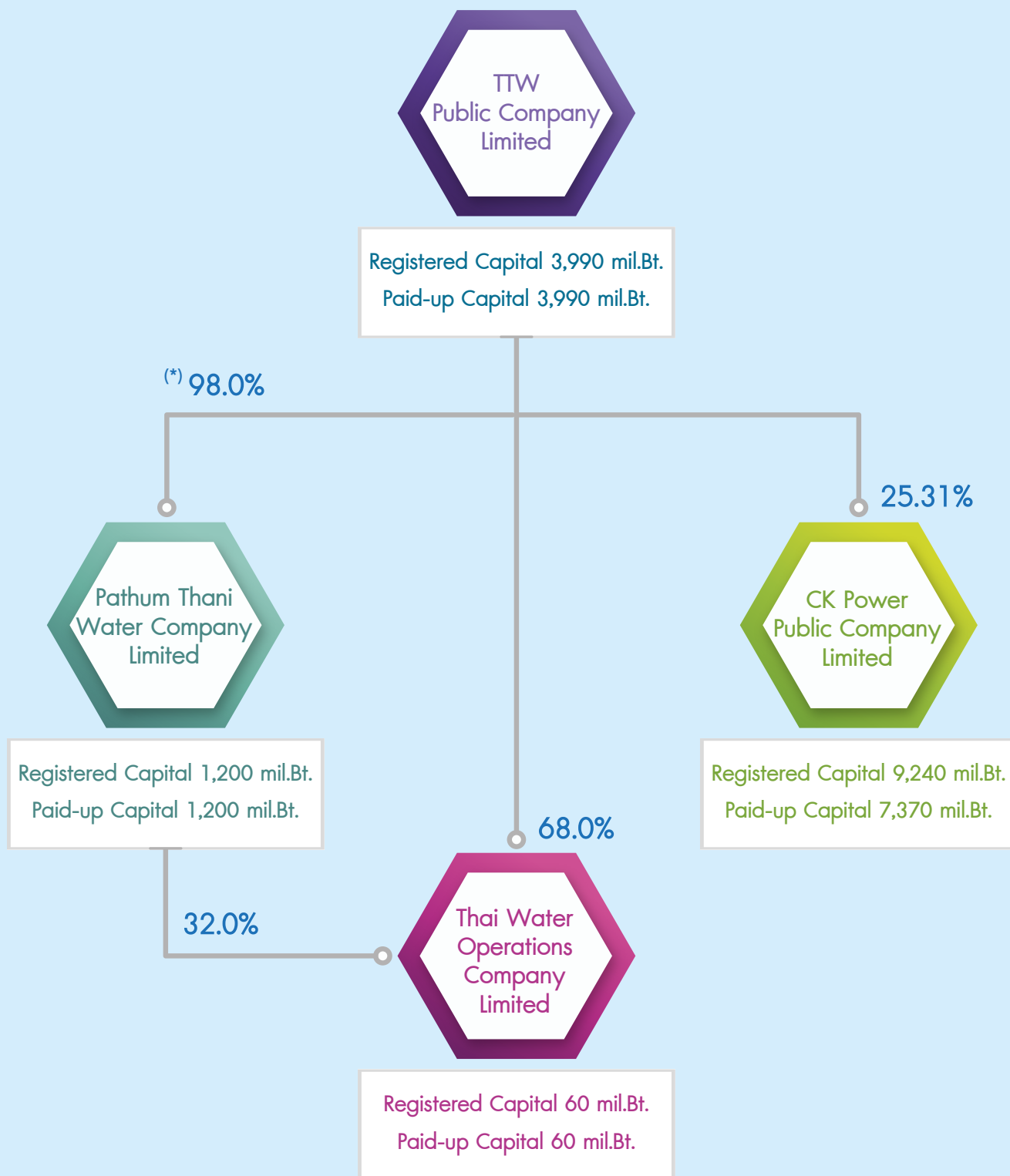
### Investment Opportunities in CLMV (Cambodia, Laos, Myanmar and Vietnam) Countries

CLMV countries have average economic growth of 6-7% per year and the combined number of population in these countries is 170 million. The demand for infrastructure and utilities, especially tap water in countries such as Cambodia, Laos and Myanmar is very high and a large number of their population do not have access to clean water.

The Company has a plan to develop projects in foreign countries but the move must be carefully undertaken due to high-risk factors in the CLMV countries.

# // TTW and its Subsidiaries Structure

As of 31 December 2018



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

## // List of Subsidiaries

### Pathum Thani Water Company Limited

Business Category	Produce and distribute tap water to the Provincial Waterworks Authority (PWA) in Pathumthani - Rangsit area
Registered Capital	1,200,000,000 Baht
Paid-up Capital	1,200,000,000 Baht
Divided into Common Stock	12,000,000 Shares
Par Value	100 Baht per share
Address	43 Moo 3 Chiangrak Noi - Bang Sai Road, Baan Pathum, Samkhok, Pathumthani 12160 Tel (+662) 019-9484 Fax (+662) 420-6064
Website	<a href="http://www.ptw.co.th">http://www.ptw.co.th</a>

### Thai Water Operations Company Limited

Business Category	Operate and Maintain tap water production, distribution system and Wastewater treatment system
Registered Capital	60,000,000 Baht
Paid-up Capital	60,000,000 Baht
Divided into Common Stock	600,000 Shares
Par Value	100 Baht per share
Address	30/10 Moo12 Buddha Monthon 5 Road, Rai Khing, Sampran, Nakhon Pathom 73210 Tel (+622) 019-9480 Fax (+662) 420-6064
Website	<a href="http://www.two.co.th">http://www.two.co.th</a>

### CK Power Public Company Limited

Business Category	Holding Company, by holding shares in other companies engaging in the business of production and sales of electricity generated from various kinds of energy both in Thailand and Overseas.
Registered Capital	9,240,000,000 Baht
Paid-up Capital	7,370,000,000 Baht
Divided into Common Stock	9,240,000,000 Shares
Par Value	1 Baht per share
Address	587 Viriyathavorn Building, 19 <sup>th</sup> floor, Sutthisarn Vinijchai Road, Din Daeng, Bangkok 10400 Tel (+662) 691-9720 Fax (+662) 691-9723
Website	<a href="http://www.ckpower.co.th">http://www.ckpower.co.th</a>



## Risk Management

TTW Public Company Limited conducts risk management in business operations so that organizational levels based-risks in each aspect can be managed to reach the acceptable levels by the encouragement from the management that makes the operational plans to become practical and successful. This can be accomplished by having each operational sector propose operational plans and report the performances quarterly to the Risk Management Officer (RMO), and make a summary of risk management meetings in each quarter to report to Risk Management Committee (RMC). In case of political, economic and social changes, the company always makes a self-review in order to keep up with current situations and to make itself updated. Therefore, if the company is always prepared, it can adjust strategies or operational plans for many issues, resulting in good outcomes in the future. With good risk management, if any incident affecting the organization occurs, the impact in many aspects can be rectified or lessened and also crises can be turned into opportunities for the company.

In 2018 the company reviewed the register of the organizational risks and revised a list of risks resulting from both internal and external factors. However, the company still implements organizational risk management in accordance with Enterprise Risk Management Framework which is divided into 3 parts in terms of Strategy, Operation, and Finance by arranging for a register of risks consisting of risk items, risk control measures and monitoring operating results of risk management designated plans continuously with the following details:

### Strategic Risk

1. **The water supply was not according to the business plan.** There were 5 risk factors.
  - 1.1 Increasing of the minimum of quantity (MOQ) both TTW and PTW
  - 1.2 To study explore analyze and coordinate with relevant agencies on the water demand in current service area and / or other potential areas
  - 1.3 Following the other tap water producers both public and private sectors that would affect the water supply in the service area of the company
  - 1.4 Analysis of irregularities in the amount of water supply of the company
  - 1.5 Manage the maintenance of machinery, main equipment and electrical systems, as well as formulate solutions and preventive measures.

### Operating Risk

2. **Quality of tap water was not according to the sales-purchase tap water contract.** There were 2 risk factors.
  - 2.1 To plan surveillance and proper monitoring.
  - 2.2 To coordinate the information exchange with relevant agencies such as the Royal Irrigation Department, Metropolitan Waterworks Authority, Provincial Waterworks Authority and the Regional Environment Office 5 etc.
3. **To create continuity in human resource management to support the business expansion**  
Create a plan to develop knowledge and compensation for employees with high potential

### Financial Risk

4. **The proficiency to increase the number of tap water business as well as expansion of the tap water business and related water business in the future.** There were 2 risk factors.
  - 4.1 To follow up news and information, including seek opportunities for investment about water business of government sector.
  - 4.2 To study for searching areas in both domestic and foreign countries. Ongoing project, Study project and Lead project

## Internal Control

TTW's Board of Directors and the management team recognize the importance of internal control and risk management systems. If, in the course of business operation, any type of risk may occur, all departments in the Company be able to address such risk with the laid out measure by mitigating the risk to a lower or acceptable level. The Company tries to have in place a sound risk management and control system to ensure that it can operate to achieve the business goals of stable and sustainable growth and efficient operation. The Company strongly believe that if resource management and control system is appropriately put in place, it would be able to achieve the laid out business goals.

In recognizing the importance of internal control systems, the Board of Directors has assigned the Auditing Committee which comprises 3 independent committee members to direct and supervise internal control system and risk management system of the company efficiently and correctly in accordance with good corporate governance principle, transparency, precision and reliability. At the meeting on November 9, 2017, the Board of Directors resolved to approve a total of 6 internal auditing plans and to appoint the Dhamniti Law Office to conduct the internal auditing in 2018, in cooperation with the Company's Internal Audit Section. The Dhamniti Law Office, then, appointed Ms. Kornkot Wanasawat, the law office's vice president to be the main responsible person in the Company's Internal Audit Section. The Company's Audit Committee has reviewed the qualifications of the Dhamniti Law Office and Ms. Kornkot Wanasawat and confirmed that the assigned individual are qualified to perform the duties because she was independent and have a long experience of 15 years in internal auditing. The assigned person also attended various training courses such as the IT Audit training course, organized by the Federation of Accounting Professionals (FAP), CPIAT, COSO:2013, Asian Confederation of Institutes of Internal Auditors (ACIA) Conference, the Power of Professional Alliances, Investigation of Corruption and Leading IA in the Era of Digital Disruption. The Company has an Internal Audit Section and the manager of this section has completed training courses relating to internal audit. The Company's Internal Audit Section shall coordinate the audit process with the Dhamniti Law Office for a total of 3 rounds. After that, the Internal Audit Section shall conduct 2 follow-up activities as recommended and 1 special audit. After the audit is completed, the Internal Audit Section shall report the results of the audit to the Managing Director. The Internal Audit Section shall also report the results of the internal audit directly to the Company's Auditing Committee in order to ensure independence in performing the auditing. The Audit Committee has the power and duties to propose, appoint, transfer and terminate the employment of the internal auditor. The Company has conducted the internal audit according to the Professional Standards of Internal Audit and Internal Control Practice of the Committee of Sponsoring Organizations of the Tread way Commission: COSO which is widely recognized in respect of principle and content of assessment in 2018.

## // Related Party Transaction

TTW complies with requirements and rules and regulations of the Securities and Exchange Commission (SEC). In a case that TTW is to engage party transaction that may lead to a conflict of interest, an approval from the Board of Directors must be sought. The Audit Committee will determine the justification of the engagement in such transaction by taking into account the maximum benefits for the company. The prices and conditions in the transaction must be based on normal business nature, fair price, or by comparing it to a market price. Any directors who related to such transaction that may lead to a conflict of interest shall not be eligible to attend or vote in the meeting to review such agenda.

Moreover, TTW also has a policy to disclose any related party transactions as defined in the announcement of The Stock Exchange of Thailand on the criteria, conditions and method for the disclosure of related party transaction of a listed company and in compliance with the requirements, stipulated in the Securities and Exchange Act. Related party transaction were based on market prices and fair and at arms' length.

For the accounting period, ended on 31 December 2018, the company has disclosed related party transactions in the note to financial statement that has already been audited by the auditor of the company in compliance with generally acceptable accounting standards and information disclosure form 2018, which contained the following details

Related Parties	Nature of Relationship	Nature of the Transaction	Amount and Value of the transaction as of 31 December 2018		Description
			Consolidated Financial statements	Separate Financial statements	
1. CH. Karnchang Public Company Limited (CK) Operates construction business	<ul style="list-style-type: none"> <li>Being a major shareholder (holding 19.40% of company shares)</li> <li>Having 1 co-director, i.e., Mr. Plew Trivisvavet Providing services to each other</li> </ul>	Other receivable related parties	45	45	Tap water and wastewater treatment are paid according to the contract
		Sales of treated water	164	164	
		Service income	42	42	

Related Parties	Nature of Relationship	Nature of the Transaction	Amount and Value of the transaction as of 31 December 2018		Description
			Consolidated Financial statements	Separate Financial statements	
<b>2. Pathum Thani Water Company Limited (PTW)</b> is the concessionaire that produces and distributes tap water in Pathum Thani province to provincial Waterworks Authority (PWA)	<ul style="list-style-type: none"> <li>Being a subsidiary company (the company holds 98% of shares)</li> <li>Having 2 co-directors : 1. Mr. Phairuch Mekarporn 2. Mr. Hideo Matsumoto</li> <li>Having 1 executive directors in PTW: 1. Ms. Walainut Trivisvavet</li> <li>Providing services to each other</li> </ul>	<ul style="list-style-type: none"> <li>Divided-Income</li> <li>Interest income</li> <li>Long term loans to related party</li> <li>Interest receivable</li> <li>Management income</li> </ul>		887,037  29,562  461,080  217  6,000	<ul style="list-style-type: none"> <li>Dividend income is payment made according to dividend announcement</li> <li>Interest income is payment made as a rete calculated as MLR minus a defined amount of difference per year</li> <li>Long term loans with an interest rate calculated as MLR minus an amount of difference as defined in contract</li> <li>Management income is a payment made according to contract</li> </ul>
<b>3. Thai Water Operations Co., Ltd. (TWO)</b> is provider of maintenance service for production and wastewater treatment systems	<ul style="list-style-type: none"> <li>Being a subsidiary company (the company holds 68.50% of shares)</li> <li>Having 2 executive directors in TWO: 1. Ms. Walainut Trivisvavet 2. Mr. Tanat Siricharoen</li> <li>Providing services to each other</li> </ul>	<ul style="list-style-type: none"> <li>Sale and service cost</li> <li>Administration cost - Income</li> <li>Security bond - Creditor</li> </ul>		36,444  9,600  5,000	<ul style="list-style-type: none"> <li>Cost of services and maintenance cost for tap water production system are the payment made according to the contract</li> <li>Management income is the payment made according to the contract</li> <li>Retention payable is the payment made according to the contract</li> </ul>

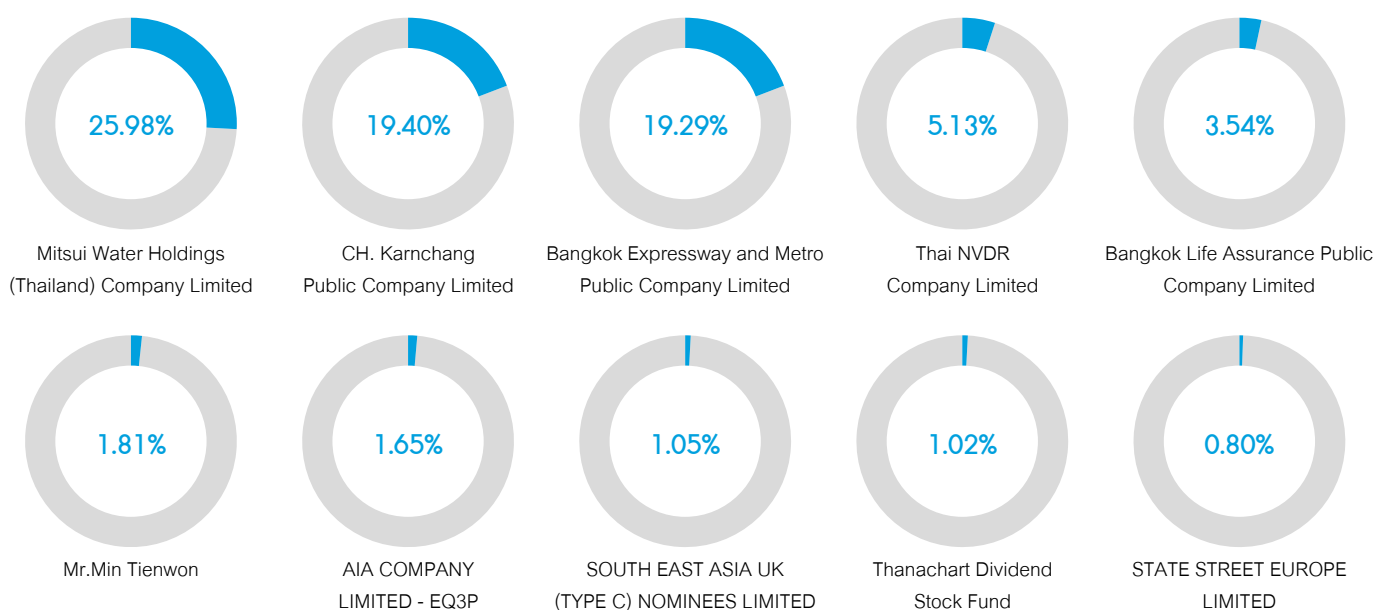


Related Parties	Nature of Relationship	Nature of the Transaction	Amount and Value of the transaction as of 31 December 2018		Description
			Consolidated Financial statements	Separate Financial statements	
4. CK Power Public Company Limited is a holding company that invests in electricity generation and distribution business	<ul style="list-style-type: none"> <li>Being a subsidiary company (the company holds 25.31% of shares)</li> <li>Having 2 executives serve as directors in CKP:               <ol style="list-style-type: none"> <li>Dr. Thanong Bidaya</li> <li>Mr. Plew Trivisvavet</li> </ol> </li> </ul>	<ul style="list-style-type: none"> <li>Dividend-income</li> </ul>		41,977	<ul style="list-style-type: none"> <li>Dividend income is payment made according to dividend announcement</li> </ul>
5. Bang Pa-In Co-Generation Co., Ltd. Operates electricity generation for distributing to EGAT	<ul style="list-style-type: none"> <li>Being a subsidiary of CK Power Public Company Limited</li> </ul>	<ul style="list-style-type: none"> <li>Other receivables related parties</li> <li>Sales of treated water</li> <li>Service income</li> </ul>	4,468  45,877  2,966	4,468  45,877  2,966	<ul style="list-style-type: none"> <li>Tap water and waste water treatment service are payments according to contract</li> </ul>
6. Export Transport Co., Ltd. Operates large lorry transportation	<ul style="list-style-type: none"> <li>Having 1 co-director, which is Mr. Plew Trivisvavet</li> <li>Providing services to each other</li> </ul>	<ul style="list-style-type: none"> <li>Other receivables related parties</li> <li>Sales of treated water</li> <li>Service income</li> </ul>	2  17  5	2  17  5	<ul style="list-style-type: none"> <li>Tap water and waste water treatment service are payments according to contract</li> </ul>
7. Bang-Pa-In Land Development Co., Ltd. engages in the business of buying and selling immoveable properties under its ownership not for residence	<ul style="list-style-type: none"> <li>Having 1 co-director, which is Mr. Plew Trivisvavet</li> <li>Providing services to each other</li> </ul>	<ul style="list-style-type: none"> <li>Trade and Other receivable related parties</li> <li>Sales of treated water</li> <li>Service income</li> </ul>	521  846  219	521  846  219	<ul style="list-style-type: none"> <li>The cost of pumping treated wastewater to public aqueduct is payment according to contract</li> <li>Tap water and wastewater treatment service are payments according to contract</li> </ul>
8. Mitsui & Co., Ltd.	<ul style="list-style-type: none"> <li>Businesses that are in the same group of companies with major shareholders</li> </ul>	<ul style="list-style-type: none"> <li>Other receivables related parties</li> </ul>	3.9	3.9	<ul style="list-style-type: none"> <li>Feasibility study for future water supply projects</li> </ul>

## Shareholding Structure

At the end of 31 December 2018, the Company has registered capital 3,990,000,000 Baht, paid-up capital 3,990,000,000 Baht, divided into common stock 3,990,000,000 shares and par value 1 Baht per share.

List of Shareholders top 10 at the end of 28 December 2018



List of Shareholders	Number of shares	Shareholding (%)
1. Mitsui Water Holdings (Thailand) Company Limited	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	769,777,100	19.29%
4. Thai NVDR Company Limited	204,740,666	5.13%
5. Bangkok Life Assurance Public Company Limited	141,136,600	3.54%
6. Mr.Min Tienwon	72,100,000	1.81%
7. AIA COMPANY LIMITED - EQ3P	65,742,100	1.65%
8. SOUTH EAST ASIA UK (TYPE C) NOMINEES LIMITED	41,771,575	1.05%
9. Thanachart Dividend Stock Fund	40,494,700	1.02%
10. STATE STREET EUROPE LIMITED	31,778,190	0.80%

## // Dividend Policy

To maintain a consistent dividend payment and the benefit of the shareholders, the company has set dividend payment policy as follow:

The company will prioritize the financial needs for the next five years and maintain appropriate level of the debt-equity ratio. If there is a possibility to pay dividend, the company will consider paying as high rate as possible. However, such rate shall not be less than 50% of its net profit after corporate income tax, statutory reserve, and other reserves required by terms of relevant agreements.

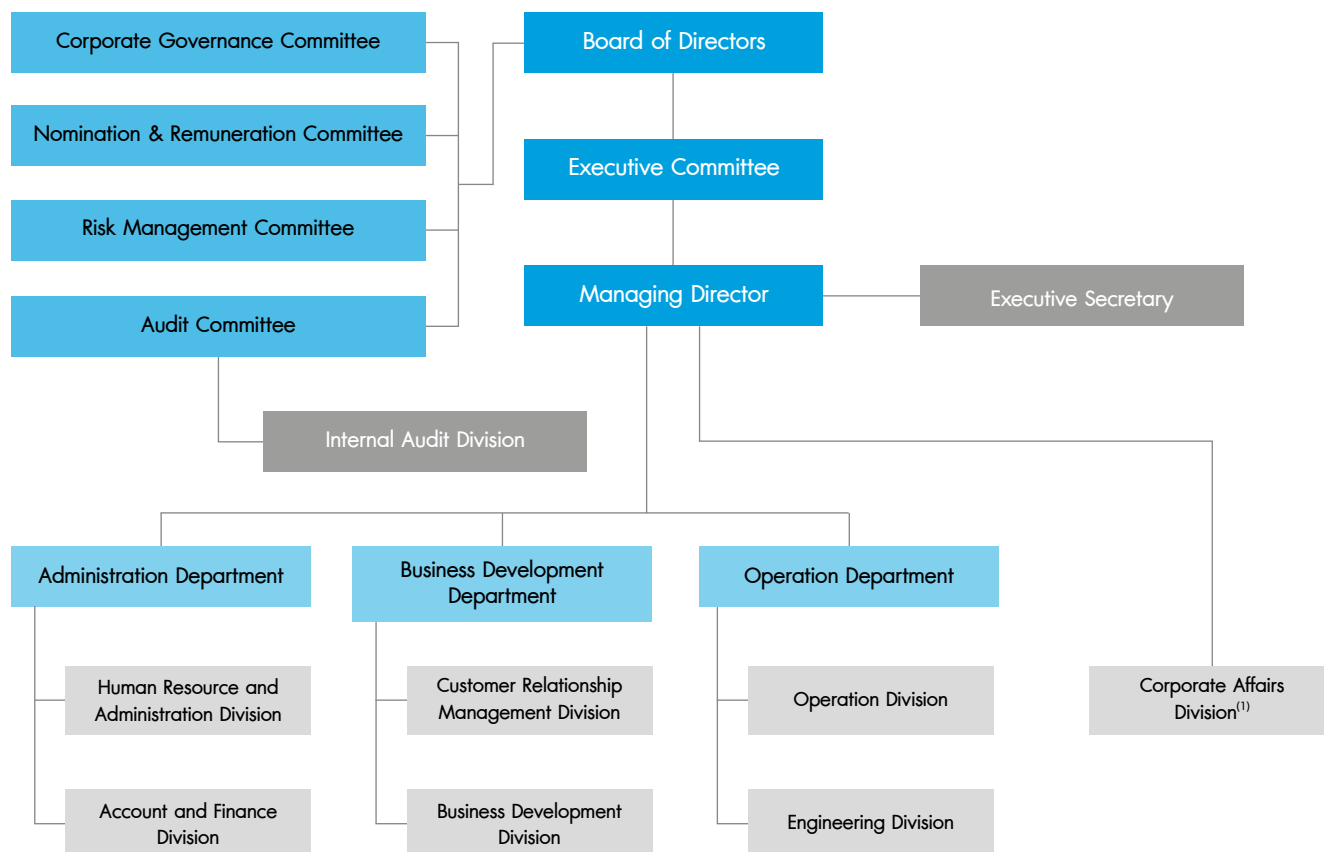
(Unit : Baht/Share)

2018 First Half	2017	2016	2015	2014
0.30	0.60	0.60	0.60	0.65



# Management Structure

As of 31 December 2018, the company's management structure was as follows;



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

## The Board of Directors

As at 31 December 2018, The Board of Directors of TTW Public Company Limited consists of 12 members. Dr. Thanong Bidaya as the Chairman of the Board of Directors. There is also a Sub-Committee, which is responsible for screening and supervising specific issues for the Board of Directors consists of 5 groups as follows:

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

The company has a structure of committees and management which can check and balance one another under management framework as follows:

- a) There are at least one-third of independent directors of total members of Board of Directors which is not less than 3 persons and there are 4 independent directors in Board of Directors of the company each will be in position for a 3-year-term.
- b) Audit Committee is independent with performing duties as defined by the regulations of SET and has sufficient knowledge and experiences to verify the reliability of financial statement as well as performing other duties of the Audit Committee. The Audit Committee comprises at least 3 independent directors but not more than 5, which are appointed by Board of Directors and among this number, there must be at least 2 expert directors from Board of Directors and at least 1 director who has knowledge and experiences in accounting in order to support operations of the Corporate Governance Committee,



to verify administration, internal control, internal audit and risk management as well as to prepare financial reports for company's operations and disclosure to carry out with transparency and reliability.

- c) The Chairman of the Board of Directors is not the same person as the Chief Executive Officer and Managing Director and not holding any position in the subcommittee in order to be clear in separating duties and operations
- d) Authorization between the committee and the management department is assigned clearly under the topic of Corporate Governance
- e) There were not less than 5 directors and not more than 12 person without gender discrimination which currently has 12 directors, there were 2 women as follows

Name	Position	Date of appointment
1. Dr. Thanong Bidaya	Independent Director and Chairman of the Board of Directors	December 17, 2008
2. Mr. Plew Trivisvavet	Director and Vice Chairman of Board of Directors	September 26, 2006
3. Mr. Phongsarit Tantisuvanitchkul	Director and Chairman of Executive Committee	February 25, 2016
4. Mr. Phairuch Mekarporn <sup>(1)</sup>	Independent Director, Chairman of Audit Committee, Chairman of Nomination and Remuneration Committee, and Corporate Governance Committee	September 26, 2006
5. Mr. Somnuk Chaidejsuriya	Independent Director, Chairman of Corporate Governance Committee, Nomination and Remuneration Committee and Audit Committee	September 26, 2006
6. Mr. Suvich Pungcharoen	Director and Executive Committee	September 26, 2006
7. Dr. Sombat Kitjalaksana	Director and Executive Committee	September 11, 2000
8. Mrs. Payao Marittanaporn <sup>(3)</sup>	Director, Risk Management Committee and Nomination and Remuneration Committee	February 17, 2015
9. Mr. Patarut Dardarananda <sup>(2)</sup>	Independent Director, Audit Committee, Risk Management Committee and Corporate Governance Committee	December 12, 2018
10. Mr. Shunsuke Murai	Director, Nomination and Remuneration Committee	February 27, 2018
11. Mr. Hideo Matsumoto	Director, Executive Committee and Risk Management Committee	December 21, 2017
12. Ms. Walainut Trivisvavet	Director, Executive Committee, Risk Management Committee, Corporate Governance Committee and Managing Director	March 1, 2018

Corporate Affairs Division Director is the Company Secretary

Remark : <sup>(1)</sup> Mr. Phairuch Mekarporn was appointed to be Chairman of Audit Committee as per the resolution of the Board of Directors meeting no.5/2018 on 12 December 2018

<sup>(2)</sup> Mr. Patarut Dardarananda was appointed to be Independent Director as per the resolution of the Board of Directors meeting no. 5/2018 on 12 December 2018

<sup>(3)</sup> Mrs. Payao Marittanaporn was appointed to be Chairman of Risk Management Committee as per the resolution of the Board of Director meeting no 1/2019 on 26 February 2019

#### The Company's authorized signatory directors shall be:

- 1) Any two of these six directors, Mr. Plew Trivisvavet, Mr. Phongsarit Tantisuvanitchkul, Dr. Sombat Kitjalaksana, Mrs. Payao Marittanaporn, Mr. Suvich Pungcharoen, and Ms. Walainut Trivisvavet jointly sign and affix the company's seal; or
- 2) Either Mr. Plew Trivisvavet or Mr. Phongsarit Tantisuvanitchkul or Dr. Sombat Kitjalaksana or Mrs. Payao Marittanaporn or Mr. Suvich Pungcharoen, and or Ms. Walainut Trivisvavet either Mr. Shunsuke Murai or Mr. Hideo Matsumoto, totaling two directors, jointly sign and affix the company's seal.

The Board of Directors holds regular meetings every 3 months and there were additional special meetings as necessary by setting an agendas in advance. There were agendas for regularly monitor performance including the Board of Directors meeting without management. The Corporate Affairs Division submitted the meeting invitation together with the meeting agendas to the Board of Directors at least 10 days in advance and sent the meeting documents at least 7 days in advance to allow the Board of Directors to have sufficient time to study the information before attending the meeting. In 2018, there was the Board of Directors meeting and sub-committees as well as the Annual General Meeting of Shareholders total of 24 times as follows;

- The Board of Directors Meeting totally 5 times
- The Executive Committee totally 5 times

- The Audit Committee Meeting   totally 5 times
- The Risk Management Committee Meeting                             totally 4 times
- The Corporate Governance Committee Meeting                      totally 2 times
- The Nomination and Remuneration Committee Meeting          totally 2 times
- Annual General Meeting of Shareholders                             totally 1 time

The Board of Directors reviews and approves vision, mission, corporate values and strategies, including the charter of every subcommittee every year. In 2018, the Board of Directors has considered the vision of the company to remain unchanged **“To be Thailand’s leading company in Water, Energy and Eco-Friendly Businesses”**. Including the strategy and charter of the sub-committee remain unchanged. There was scheduled the Board of Directors meeting and Sub-committee in advance throughout the year in 4<sup>th</sup> quarter.

## Independent Directors

The Company has a policy to appoint independent director at least 1/3 of the total number of Board members and no fewer than 3 persons by the consideration of appointment of independent directors will consider the legal requirements, Notification of the Stock Exchange of Thailand and the Securities and Exchange Commission in Subject: Definition of Independent Directors As well as the Charter of the Board of Directors on the qualifications of the Board of Directors. The company has determined the qualifications of independent directors that more strict than the definition of independent directors of the SEC as follows.

1. Shall hold shares not exceeding 0.5% of the total number of voting shares of the Company, subsidiary, associate or juristic person that may be conflict;
2. Shall not be related to the management of the company, its subsidiaries and its associated companies, Moreover, shall not be a major shareholder, a temporary or full-time employees and an advisor regularly earning salaries from the company, its subsidiaries, its associated companies and its major shareholders;
3. Shall not be a person related by blood or legal registration as father, mother, spouse, sibling, or child, including spouse of child, of an executive, major shareholder, controlling person, or person to be nominated as executive or controlling person of the Company or its subsidiary;
4. Shall not have any direct or indirect conflicts of interest against the management of the company and its subsidiaries, and its associated companies for the period of not less than one year prior to nomination except the Board of Director was attentively considered that such conflict of interest not affecting the operation and have independent decision-making of Independent directors;
5. Shall not be a director who has been appointed as representative of the company's director, major shareholder or shareholders who are related to the major shareholder;
6. Shall be independently perform the duties and give the opinion or report on the result of duties as assigned by the Board of Directors, uncontrolled by the management or major shareholders and related person or relative of such person;
7. Shall be able to attend meetings of the Board of Directors and make independent judgment;
8. Shall not operate any business which has the same nature as and is in significant competition with the business of the company or its subsidiaries, or not being a principal partner in any partnership, or not be an executive director, employee, staff, or advisor regularly earning the salaries; or holding shares not exceeding 0.5 percent of the total number of voting right of any other company operating business which has the same as and is in significant competition with the business of the company or its subsidiaries;
9. Shall not have any characteristics which make him/her incapable of expressing independent opinion with regard to the company's business affairs;
10. Shall be able to look after the interests of all shareholders equally;
11. Shall be able to prevent conflicts of interest;
12. Shall not have been convicted of violating security or stock exchange laws, financial institution laws, life insurance laws, general insurance laws, anti-money laundering laws or any other financial law of a similar nature, whether Thai or foreign, by an agency with authority under that certain law. Such wrongful acts include those involved with unfair trading in shares or perpetration of deception, fraud, or corruption.

As of 31 December 2018, the company has 4 independent directors who were qualified according to the Notification of the Capital Market Supervisory Board by independent directors of the company not being a director in more than 5 listed companies as follows;

Independent Director	Position
1. Dr. Thanong Bidaya	Chairman of the Board of Directors
2. Mr. Phairuch Mekarporn	Chairman of Audit Committee, Chairman of Nomination and Remuneration Committee, and Corporate Governance Committee
3. Mr. Somnuk Chaidejsuriya	Chairman of Corporate Governance Committee, Nomination and Remuneration Committee and Audit Committee
4. Mr. Patarut Dardarananda	Audit Committee, Risk Management Committee and Corporate Governance Committee

#### Authorized and Duties of Board of Directors

The Board of Directors shall take responsibilities towards the shareholders in respect of the Company's business operations, and supervision of the Company's operations to be in line with the guidelines and goals, which would give rise to the maximum benefits to the shareholders, subject to the code of ethics and taking into account the benefits of all interested parties.

- (1) Supervising the company's operations to ensure compliance with laws, objectives and the Company's Articles of Association, as well as resolutions of the shareholders' meetings, and protecting the company's interests based on the good corporate governance principles
- (2) Determining policies and directions of the company's operations and supervising the management to take actions to ensure compliance with the policy with efficiency and effectiveness so as to result in the optimum economic value to the business and great prosperity to the shareholders
- (3) Approving vision, missions, corporate values as anticipated by the Company, and the business ethics
- (4) Arranging for and supervising the administration in compliance with the good corporate governance principles
- (5) Considering approval for budget for investment and budget for the company's annual business operations, including monitoring the use of the company's resources
- (6) Providing complete, correct and sufficient reports on financial information, data and general information which are important to shareholders, and affirming the certification of the reported information
- (7) Arranging for the company to have an efficient internal control and audit system as well as appropriate and adequate risk management measures, including following on such matters on a regular basis
- (8) The Board has also formulated a charter for the Executive Committee, the Risk Management Committee and Nomination and Remuneration Committee as a guideline for their duties
- (9) Supervising the Executive Committee, Sub-committees and the management to comply with the specified policy
- (10) Considering performance evaluation, determination of salaries, wages, welfare, bonuses, allowances and other remuneration, including expenses and facilities of the Managing Directors, as well as determining backup plan for nominating personnel to hold major office of the management should the management become unable to perform the duties.
- (11) Considering revision of the scope of authorization, duties, responsibilities and roles of the Executive Committee, Subcommittees and the management as appropriate

#### Authorized and Duties of Chairman of Board of Directors

Chairman of the Board, as a leader of the organization, shall supervise the benefits of the company, shareholders as well as of other interested parties in order to achieve maximum benefits in long term, by acting as a leader in thinking, creativity, combining capabilities of directors with the management together, resulting in the achievement of strategic plans of company's business conduction both in short term and long term, monitoring operations of the management operations of the management, arranging for preparation of financial status reports and significant financial information presented to Board of Directors quarterly as well as encouraging the corporate governance policy regarding social and environmental responsibilities of the company.

#### Administrative Responsibilities

- a. Supervising overview of company's strategies and policies to constitute justice as well as supervising company's customer with equality
- b. Emphasis on business operations by conforming with the law in terms of regulatory agencies and corporate governance as well as to the resolutions of shareholders' meetings

## Board of Directors' Meetings

Presiding over as Chairman of the meeting and attending every meeting to constitute Board of Directors Meetings efficiently as well as encouraging all directors to express their opinions by delegating administrative authority to the management appropriately, supervising and arranging all directors to receive correct, on-time and clear information to be used for decision-making which shall lead to achievement of the organization efficiently, providing time management sufficiently for Board of Directors to consult and express opinions widely in related issues during the important agenda. Chairman of the Board utilizes the policy of enhancing good relations between Executive Directors and Non-executive Directors.

## Development and Evaluation of Work Efficiency

- a) Providing Orientation Program and operation visit for all new directors which can assist new directors to understand and adapt themselves to the organization rapidly
- b) Support and promoting all directors to attend skills development training, various fields of knowledge which are beneficial for performing directors' duties in well-known and recognized institutes such as Thai Institute of Directors (IOD) and Stock Exchange of Thailand (SET) etc.
- c) Support and promoting all directors working as a team which constitutes efficiency and effectiveness in working, arranging evaluation of the Board's operations both self-evaluation, cross evaluation and group evaluation and taking such evaluation outcome used to improve and develop the Board's operations
- d) Providing monitoring system and assessment of the organization's operations being consistent to policy regularly and continuously

## Relationship between Shareholders

Supervising and arranging communications between shareholders of the company and providing opportunities for shareholders to communicate with the Board for exchanging opinions

## Shareholders Meeting

Presiding over as Chairman of every Shareholders meeting and a responsible is assigned to supervise correctly as defined by law and related regulations as well as making sure that all directors are notified to attend the meeting. It is an opportunity for shareholders to exercise their rights openly in attending the meeting and voting in Shareholders' Meeting, asking questions and additional explanation, acknowledgement of the annual report, approval Financial Statements, approving appropriation of profits and dividends, director appointment and compensation paid to directors, auditor election and proposing remuneration of auditors and approval of Company's Memorandum of Association amendment.

## Other Roles of Chairman of Board of Directors

Performing duties with honesty, supervising structure of the Board appropriately, supervising in taking policies and the Board's decisions for operating effectively, promoting corporate governance, and social and environmental responsibility activities in all levels ranging from directors, top management to employees by operating in accordance with guidelines of the Board's structure to promote corporate governance of the company.

## Sub-Committee

### Executive Committee

The Executive Committee consisted of 5 members as follows:

Name	Positions
1. Mr. Phongsarit Tantisuvanitchkul	Chairman of the Executive Committee
2. Dr. Sombat Kitjalaksana	Committee
3. Mr. Suvich Pungcharoen	Committee
4. Mr. Hideo Matsumoto	Committee
5. Ms. Walainut Trivisvavet	Committee and Secretary

### Scope of Authorized and duties of the Executive Committee

At the Board of Directors' Meeting, a resolution was made to designate the scope of Authorized and duties of Executive Committee as follows:

- (1) Supervising the Managing Directors' performances to ensure compliance with resolutions, policies and strategies as determined by the Board of Directors, as well as providing advice and suggestions to the managing Directors
- (2) Supervising the conduct of feasibility studies on new projects, and approving implementation of projects as it deems appropriate within the amount under (3)
- (3) Having authorized to approve execution of any juristic acts which would have a binding effect upon the company within an amount of not exceeding Baht 50 (Fifty) Million provided that such approval shall involve neither any transactions giving rise to any conflict of interest against the company or its subsidiaries according to Declaration of Office of the Securities and Exchange Commission and Stock Exchange of Thailand
- (4) Having authorized to consider, approve and/or determine policies on administration and business operations of the company or any actions which would have a binding effect upon the company, subject to the scope of policies and strategies as determined by the board of Directors
- (5) Having authorized to employ, appoint, impose disciplinary actions, terminate, dismiss, remove, determine salaries, bonuses, benefits and other remunerations, including expenses and facilities of the company's officers or staff in the position of Division Director or equivalent and higher, but excluding the Managing Director
- (6) Having authorized to appoint, determine authorities and duties, delegate directions of the supervision policy, and determine remuneration, allowances, expenses and facilities for special workgroups for carrying out specific works, including to approve proposals of special workgroups within the amount under (3)
- (7) Having authorized to appoint chairman of the advisors, advisors and/or advisory board to the Executive Committee as appropriate whereby remunerations, allowances, expenses and facilities for the chairman of the advisors, advisors and/or advisory board as mentioned shall be determined by the Nomination and Remuneration Committee
- (8) Performing other duties as delegated from time to time by the Board of Directors

However, the Executive Committee and the person authorized by the Executive Committee has no authorized to approve any matters or transactions in which the Executive Committee or persons who may have conflict, have interests or may have conflict of interests in any other manners, would enter into with the company or its subsidiaries, as defined by the Securities and Exchange Commission and Stock Exchange of Thailand.

### Audit Committee

The Audit Committee consisted of 3 directors as follows:

Name	Positions
1. Mr. Phairuch Mekarporn	Chairman of the Audit Committee
2. Mr. Somnuk Chaidejsuriya	Committee
3. Mr. Patarut Dardarananda	Committee

Internal Audit Manager is the Secretary

Every director in the committee is knowledgeable about and experienced in finance, accounting and management. The Manager of the Internal Audit Unit acts as the Secretary of the Audit Committee.

### Scope of authorized and duties of the Audit Committee

At the Board of Directors' Meeting, a resolution was made to designate the scope of authorized and duties of Audit Committee with further amendment regarding authorized and duties of Audit Committee according as following details:

- (1) Reviewing the Company's financial reports to ensure the correctness and adequate disclosure
- (2) Reviewing the internal control and internal audit systems of the Company to ensure the suitability and efficiency by considering independency of Internal Audit Department and approving appointment, removal and termination of Internal Audit Chief
- (3) Reviewing the Company's operations to ensure its compliance with the laws on securities and exchange, the regulations of the Stock Exchange, or such laws, rules and regulations and policies related to the businesses of the Company
- (4) Considering the Company's disclosure in respect of related party transactions or such transactions which may give rise to conflict of interests, to ensure the accuracy, completeness and timeliness



- (5) Considering to approve Annual Internal Audit Plan and personnel of Internal Audit Department
- (6) Considering, selecting, nominating for appointment and proposing remuneration for the Company's auditor to the Board of Directors for further submission to seek approval of the shareholders by considering independency of auditor as well as organizing the meeting with auditors without the management's involvement at least once a year
- (7) Preparing the Audit Committee's corporate governance report to be disclosed in the Company's annual report whereby such report shall be signed by the Chairman of the Audit Committee
- (8) Reviewing Internal Audit Committee Charter and Internal Audit Committee Charter and Internal Audit Department Charter as it is required and appropriate
- (9) Performing other duties as delegated by the Board of Directors and with approval of the Audit Committee

## Nomination and Remuneration Committee

The Nomination and Remuneration Committee consisted of 4 directors as follows:

Name	Positions
1. Mr. Phairuch Mekarporn	Chairman of the Nomination and Remuneration Committee
2. Mr. Somnuk Chaidejsuriya	Committee
3. Mrs. Payao Marittanaporn	Committee
4. Mr. Shunsuke Murai	Committee

Corporate Affairs Division Director as the Secretary of Nomination and Remuneration.

## Scope of authorized and duties of the Nomination and Remuneration Committee

At the Board of Directors' Meeting, a resolution was made to designate the scope of authorized and duties of Nomination and Remuneration Committee as follows:

- (1) Considering the criteria and procedures for recruiting persons qualified to take office as directors of the Company, including selecting persons in accordance with the specified nomination procedures for submission to the Board of Directors for consideration and appointment, or for submission to the shareholders' meeting for consideration and appointment, as the case may be, provided that such procedures for consideration and selection of qualified persons as aforementioned shall also allow minority shareholders to nominate persons for such consideration and selection.
- (2) Considering the criteria and procedures for recruiting persons qualified to take office as the Managing Director, including nominating and selecting such persons in accordance with the specified nomination procedures for submission to the Board of Directors for consideration and appointment
- (3) Arranging for Succession Plan for key positions in management or persons eligible to take office of high-leveled executives, with regular reviews of such Plan  
The criteria were as follow
  - 3.1 Determine the succession planning method in the organization
  - 3.2 Determine the main position for the successor
  - 3.3 Determine the appropriate qualification for the main position.
  - 3.4 Evaluate and select those with high capabilities and potential or who have accumulated experience to develop to be the successor
  - 3.5 Create a leadership development plan for people who were expected to be successors.
- (4) Determining the criteria for consideration of remuneration for directors and the Managing Director
- (5) Considering proposing remuneration of directors to the Board of Directors for approval and submission to the shareholders' meetings for further consideration and approval
- (6) Considering proposing salary and adjustment of salary rates, including other remuneration of the Managing Director to the Board of Directors for consideration and approval
- (7) Performing other duties as delegated by the Board of Directors

## Corporate Governance Committee

The Corporate Governance Committee consisted of 4 directors as follows:

Name	Positions
1. Mr. Somnuk Chaidejsuriya	Chairman of the Corporate Governance Committee
2. Mr. Phairuch Mekarporn	Committee
3. Mr. Patarut Dardarananda	Committee
4. Ms. Walainut Trivisvavet	Committee and Secretary

## Scope of authorized and duties of the Corporate Governance Committee

At the Board of Directors' Meeting, a resolution was made to designate the scope of authorized and duties of Corporate Governance Committee as follows:

- (1) Proposing practical guidelines for good corporate governance to Board of Directors
- (2) Supervising the operations of the Board of Directors, the Executive Committee, various subcommittees and the management to ensure compliance with the good corporate governance principles.
- (3) Reviewing the practical guidelines for good corporate governance, by comparing with the good corporate governance principles based on international standards and of the Stock Exchange of Thailand, for submission to the Board of Directors for consideration and regular update.
- (4) Delegating policies on good corporate governance to the Company's good corporate governance workgroup and reporting the results to the good corporate governance to the Board of Directors
- (5) Having authority to invite/employ any external persons having knowledge and expertise to act as advisors and attend meetings at the Company's expenses.

## Risk Management Committee

The Risk Management Committee consisted of 4 directors as follows:

Name	Positions
1. Mrs. Payao Marittanaporn <sup>(1)</sup>	Committee
2. Mr. Patarut Dardarananda	Committee
3. Mr. Hideo Matsumoto	Committee
4. Ms. Walainut Trivisvavet	Committee and Secretary

Remark : <sup>(1)</sup> Mrs. Payao Marittanaporn was appointed to be Chairman of Risk Management Committee as per the resolution of the Board of Director meeting no 1/2019 on 26 February 2019

## Scope of authorized and duties of the Risk Management Committee

At the Board of Directors' Meeting, a resolution was made to designate the scope of authorized and duties of Risk Management Committee as follows:

- (1) Setting out the Risk Management Policy for the Company as a whole, and assigning the management to perform in compliance with such Policy, including reporting the performance results to the Risk Management Committee
- (2) Developing and reviewing the Company's Risk Management System to ensure its continual efficiency and effectiveness by means of regular evaluation and follow-up of the risk management procedures to be consistent with the specified policy
- (3) Supporting and encouraging the mutual cooperation in risk management at every level of the Company
- (4) Preparing reports on risks and suggestions to the Board of Directors
- (5) Performing other duties as delegated by the Board of Directors

## Contacting the Board of Directors

Stakeholders can contact and express opinions including informing clues that they see or did not receive justice from unlawful acts or company code of conduct or complaints about matters that may cause damage to the company, can be notified in writing, sent to the Audit Committee or the Board of Directors Through the following channels

Post	Email	Telephone
<b>Corporate Affairs Division</b> TTW Public Company Limited 30/130 Moo 12 Buddha Monthon 5 Road, Rai Khing, Sampran, Nakhon Pathom 73210	cg@ttwplc.com	(+622) 019-9490-3 (+622) 019-9484-9

The questions, complaints and suggestions will be forwarded to the relevant authorities to proceed in order to amend, summarize, report to the Audit Committee and the Board of Directors

## Corporate Secretary

Board of Directors has appointed Ms.Sudarat Chiamchan, Director of Corporate Affairs Division, as Corporate Secretary with duties and authority in compliance with the Securities and Exchange Act B.E. 2551 (No.4) to take care of the activities of Board of Directors and coordinate for practices in accordance with the resolutions of Board of Directors as follows:

- (1) Giving advice primarily to Board of Directors about regulations, rules and requirements of the Company and follow up with correct and regular practices, including reporting changes with significance to Board of Directors
- (2) Organizing the Shareholders' meetings and Board of Directors' meetings according to the Company's Articles of Association and codes of conduct
- (3) Recording reports of AGM of shareholders and Board of Directors' meetings as well as making a follow-up with practices in compliance with the resolutions of AGM of shareholders and Board of Directors' meetings
- (4) Supervising disclosure and reporting of information for the responsible parts in accordance with the regulations and requirements of The Securities Exchange of Thailand and The Securities and Exchange Commission
- (5) Contacting and communicating with general shareholders so that they are informed of the rights of shareholders and information of the Company
- (6) Supervising and coordinating in activities of Board of Directors, including the orientation of directors
- (7) Keeping the Company's important documents, such as register of directors, invitational letters of Board of Directors' meetings, reports of Board of Directors' meetings, Annual Report, invitational letters of shareholders' meetings, reports of shareholders' meetings and reports of interests of directors or executives

## Executive Management

There were 8 Executives as follows:

Name	Positions
1. Ms. Walainut Trivisvavet	Managing Director
2. Mr. Tanat Siricharoen	Assistant Managing Director, Operation Group Acting Engineering Director
3. Mr. Somkiat Pattamamongkolchai	Account and Finance Director Acting Assistant Managing Director, Administration Group
4. Ms. Sudarat Chiamchan	Corporate Affairs Director
5. Mr. Hongthong Artit	Business Development Director
6. Mr. Pipat Katikul	Operation Director
7. Mr. Chatchawan Tienprasertkij	Acting Customer Relationship Management Director
8. Mrs. Busawan Pholprasert	Acting Human Resource and Administrative Director

### Scope of authorized and duties of the Managing Director

At the Board of Directors' Meeting, resolutions were made to designate the scope of authorized and duties of the Managing Director as follows:

- (1) Having authorized to approve execution of any juristic acts which would have binding effect upon the Company within an amount of not exceeding Baht 5,000,000 (Five Million Baht only)
- (2) Having authorized to issue, amend, and adjust the Company's work rules, orders and regulations, e.g., employment, appointment, demotion, discipline of staff and employees, determination of salaries and other payments, including welfare and benefits
- (3) Having authorized to delegate authority to the Company's executive staff, such as Assistant Managing Director to perform duties on behalf of the Managing Director in particular matters such as purchasing, employment, payment instruction as deemed appropriate
- (4) Having authorized to appoint any person or group of persons to operate the business of the Company under the supervision of the Managing Director, or authorizing such person to take actions as the Managing Director deems appropriate, and also having authorized to change, amend, cancel or revoke such authorization
- (5) Having authorized for adjustment, transfer, closure and merger or expansion of the organization structure at such levels lower and the total number of staff not exceeding 315 persons
- (6) Having authorized to determine salary rates and other remuneration, including expenses and facilities of Division Director or equivalent and higher to seek approval of the from the Executive Committee
- (7) Having authorized to determine the structure of salary rates and other remunerations of staff at such levels lower than Division Director or equivalent provided that the salary rates (excluding other remunerations and benefits)
- (8) Having authorized to employ, appoint, impose disciplinary action, terminate, dismiss, remove, determine salaries, bonuses, welfare and other remunerations, including expenses and facilities of the Company's staff who receive salaries at the rate (only the salary rate, excluding any other benefits received) of not exceeding 200,000 Baht/month and/or the Company the Company's staff in such positions lower than Division Director or equivalent. Apart from those mentioned, the Managing Director shall seek approval of the Executive Committee. In this regard, the authority to take the following actions may be delegated, either in whole or in part to workgroups, the Board of Directors, the management, group of persons or any director, as appropriate
- (9) Having duty to supervise all businesses of the Company to ensure compliance with resolutions and policies of the Board of Directors
- (10) Having duty to submit balance sheets, financial statements and income statements of the Company to the Board of Directors for approval
- (11) Having duty to propose significant issues to the Board of Directors or the shareholders' meetings for consideration and approval or for any other purposes as appropriate
- (12) Having duty to conduct feasibility studies on new projects and having authorized to approve such projects, as delegated by the Executive Committee
- (13) In case the Managing Director is unable to perform duties, the Managing Director shall appoint a Division Director or another person to act for and on behalf of the Managing Director from time to time whereby such person shall have the authorized and duties equivalent to the Managing Director
- (14) Performing other duties as delegated by the Board of Directors from time to time

However, the Managing Director and the person authorized by the Managing Director has no authorized to approve any matters or transactions in which the Managing Director or persons who may have conflict, have interests or may have conflict of interests in any other manners, would enter into with the Company or its subsidiaries, as defined by the Securities and Exchange Commission and Stock Exchange of Thailand.

# Board of Directors and Management



**Dr. Thanong Bidaya**

**Age** 71 years  
**Position in the Company** Independent Director  
 Chairman of the Board of Directors  
**Date of Appointment** 17 December 2008

## Education / Training

- Ph.D. in Management, Northwestern University, U.S.A.
- M.A. in Economics, Northwestern University, U.S.A.
- B.A. in Economics, Yokohama National University, Japan
- Directors Accreditation Program (DAP) 25/2004 Thai Institute of Directors Association

## Shareholding in the Company (%)

Direct : 0.0085 Indirect : - None -

## Family Relationship between Director and Executive Management

-None-

## Work Experience

### Position in Listed Companies

2018 - Present Chairman of the Board of Directors, Independent Director  
**S.Khonkaen Foods Public Company Limited**  
 2018 - Present Chairman of the Board of Directors  
**Property Perfect Public Company Limited**  
 2012 - Present Chairman of the Board of Directors, Independent Director  
**CK Power Public Company Limited**  
 2012 - Present Chairman of the Board of Directors, Independent Director  
**Scan Inter Public Company Limited**

### Position in other Companies

2010 - Present Chairman of the Board of Directors  
**Xayaburi Power Company Limited**  
 2005 - 2006 Minister of Finance  
 2005 Minister of Commerce



**Mr. Plew Trivisvavet**

**Age** 73 years  
**Position in the Company** Director  
 Vice Chairman of the Board of Directors  
**Date of Appointment** 26 September 2006

## Education / Training

- Honorary Doctor of Civil Engineering, Rajamangala University of Technology Isan
- Honorary Doctor of Civil Engineering, Nakhon Phanom University
- Honorary Doctor of Civil Engineering, Kasetsart University
- Honorary Doctor of Science (Engineering), Thai-Nichi Institute of Technology
- Master of Electrical Engineer, Osaka University, Japan
- Bachelor of Electrical Engineer, Osaka University, Japan
- Thailand Energy Academy (TEA) Energy Literacy Leadership Program, class10
- Director Accreditation Program (DAP), Class 18/2004, Thai Institute of Directors Association
- Director Certification Program (DCP), Class 50/2004, Thai Institute of Directors Association
- Finance for Non-Finance Directors (FND), Class 13/2004, Thai Institute of Directors Association
- Capital Market Academy Executive Program (CMA), Class 4/2007, Capital Market Academy
- National Defense Course for the Joint State-Private Sectors, (Thai NCD), Class 366 Thai National Defense College

## Shareholding in the Company (%)

Direct : 0.0226 Indirect : 0.0025

## Family Relationship between Director and Executive Management

Miss Walainut Trivisvavet's uncle

## Work Experience

### Position in Listed Companies

2016 - Present	Vice Chairman of the Board Directors and Chairman of Executive Committee <b>Bangkok Expressway and Metro Public Company Limited</b>
2015 - Present	Chairman of Executive Board <b>CH. Karnchang Public Company Limited</b>
2011 - Present	Director and Chairman of Executive Committee <b>CK Power Public Company Limited</b>
2007 - Present	Corporate Governance and Risk Management Committee Member <b>CH. Karnchang Public Company Limited</b>
2003 - Present	Nomination and Remuneration Committee Member <b>CH. Karnchang Public Company Limited</b>
1998 - 2015	Chairman of the Board of Directors / Chairman of Executive Committee <b>Bangkok Metro Public Company Limited</b>
1994 - 2015	Chairman of Executive Committee and President <b>CH. Karnchang Public Company Limited</b>

### Position in other Companies

2010 - Present	Chairman of Executive Committee <b>Xayaburi Power Company Limited</b>
2006 - Present	Chairmen of Executive Committee <b>Nam Ngum 2 Power Company Limited</b>
2004 - Present	Chairman of Executive Committee <b>Southeast Asia Energy Company Limited</b>
1999 - Present	Chairman of Executive Committee <b>Construction Material Supply Company Limited</b>
1996 - Present	Chairman of the Board of Directors and Chairman of Executive Committee <b>Northern Bangkok Expressway Company Limited (NECL)</b>
1991 - Present	Director <b>CH. Karnchang Real Estate Company Limited</b>



Mr. Phongsarit Tantisuvanitchkul

### Age

46 years

### Position in the Company

Director

Chairman of the Executive Committee

### Date of Appointment

25 February 2016

### Education / Training

- Master of Engineering,  
University of Michigan Ann Arbor, U.S.A.
- Bachelor of Engineering,  
Kasetsart Univesity
- Understanding the Fundamental of Financial Statement Program  
(UFS), Class 9/2007,  
Thai Institute of Directors Association
- Finance for Non-Finance Director (FND) Program, Class 35/2007,  
Thai Institute of Directors Association
- Director Certification Program (DPC), Class 155/ 2012,  
Thai Institute of Directors Association

### Shareholding in the Company (%)

Direct : - None -

Indirect : - None -

### Family Relationship between Director and Executive

Management - None -

### Work Experience

#### Position in Listed Companies

2016 - Present	Director <b>Bangkok Expressway and Metro Public Company Limited</b>
2016 - Present	Senior Vice President - Operation Group <b>CH. Karnchang Public Company Limited</b>
2011 - 2017	Executive Vice President - Business Development <b>CH. Karnchang Public Company Limited</b>
2014 - 2015	Director <b>Bangkok Metro Public Company Limited</b>

#### Position in other Companies

2017 - Present	Chairman of the Board <b>Bangkok Metro Networks Company Limited</b>
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Mr. Phairuch Mekarporn

#### Age

73 years

#### Position in the Company

Independent Director  
Chairman of Audit Committee  
Chairman of Nomination and Remuneration Committee  
Corporate Governance Committee Member

#### Date of Appointment

26 September 2006

#### Education / Training

- Master of Mechanical Engineering, California State University, Long beach, U.S.A.
- Bachelor of Mechanical Engineering, Chulalongkorn University
- Audit Committee Program (ACP), Class 17/ 2007, Thai Institute of Directors Association
- Director Certification Program (DCP), Class 81/2006, Thai Institute of Directors Association
- Advanced Management Program: The International Senior Managers' Program Harvard University, Graduated School of Business Administration, U.S.A.
- Seminar Business in An age of uncertainty 2017, EY office Limited
- Directing in the Year of the Rooster: Hot Issue and Outlook for 2017 Thai Institute of Directors Association
- Electricity Generation from Solar Panels on Rooftop of Residential Buildings Electric Supply Industry Association of Thailand (TESIA)

#### Shareholding in the Company (%)

Direct : - None - Indirect : - None -

#### Family Relationship between Director and Executive Management - None -

#### Work Experience

##### Position in Listed Companies

2004 - Present Independent Director  
Thai Optical Group Public Company Limited

##### Position in other Companies

2007 - Present Chairman of the Board of Directors  
Pathum Thani Water Company Limited  
1996 - 2003 Managing Director  
Siam Kraft Industry Company Limited  
1989 - 1996 Managing Director  
Thai Paper Company Limited  
1985-1989 Managing Director  
TIP Fibre-Cement Company Limited



Mr. Somnuk Chaidejsuriya

#### Age

68 years

#### Position in the Company

Independent Director  
Chairman of Corporate Governance Committee  
Audit Committee Member  
Nomination and Remuneration Committee Member

#### Date of Appointment

26 September 2006

#### Education / Training

- Master of Law, Chulalongkorn University
- Bachelor of Law, Chulalongkorn University
- Thai Barrister-at-Law Institute of Legal Education, Thai Bar Association
- Advance Audit Committee Program (AAP), Class 9/2005, Thai Institute of Directors Association
- Director Certification Program (DCP), Class 46/2004, Thai Institute of Directors Association
- Diploma, National Defense Course for the Joint State-Private Sectors, Class 11 Thai National Defense College

#### Shareholding in the Company (%)

Direct : - None - Indirect : - None -

#### Family Relationship between Director and Executive Management - None -

#### Work Experience

##### Position in Listed Companies

- None -

##### Position in other Companies

2016 - Present Chairman of Nomination and Remuneration Committee  
Advance Finance Public Company Limited  
2004 - Present Director / Audit Committee / Chairman of Risk Management Committee  
Don Muang Tollway Public Company Limited  
2015 - 2018 Chairman of Audit Committee  
Loxley Wireless Public Company Limited  
2012 - 2016 Vice Chancellor  
Navamindradhiraj University  
1999 - 2000 Board Member and Executive Director  
The Marketing Organization for Farmers (MOF)  
1997 - 1998 Governor  
Deputy Governor for Operation  
Deputy Governor for Legal Affairs and Land Ownership  
Expressway Authority of Thailand (EXAT)



**Dr. Sombat Kitjalaksana**

**Age** 62 years  
**Position in the Company** Director and Executive Committee Member

**Date of Appointment** 11 September 2000

**Educational / Training**

- Dr. Techn. (Soil Mechanic)  
University of Innsbruck, Austria
- Bachelor and Master of Engineering (Civil)  
Chulalongkom University
- Director Certification Program (DCP), Class 81/2006  
Thai Institute of Directors Association
- Directors Accreditation Program (DAP), Class 36/2005  
Thai Institute of Directors Association

**Shareholding in the Company (%)**

Direct : 0.0250 Indirect : - None -

**Family Relationship between Director and Executive Management** - None -

**Work Experience**

**Position in Listed Companies**

2015 - Present	Director, Managing Director, Executive Committee Bangkok Expressway and Metro Public Company Limited
2014 - 2015	Managing Director and Executive Committee Bangkok Metro Public Company Limited
2005 - 2015	Director CH. Karnchang Public Company Limited
2001 - 2010	Vice President for Business Development CH. Karnchang Public Company Limited
2000 - 2011	Managing Director Bangkok Metro Public Company Limited

**Position in other Companies**

2009 - Present	Director Bangkok Metro Networks Company Limited
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**Mr. Suvich Pungchareon**

**Age:** 72 years  
**Position in the Company** Director  
 Executive Committee Member

**Date of Appointment** 26 September 2006

**Educational / Training**

- Master of Political Science  
Sukhothai Thammathirat University
- Bachelor of Electrical Engineering  
Tohoku University, Japan
- Diploma Program on Politics and Governance in Democratic  
Systems, Class 8/2004,  
King Prajadhipok's Institute
- Diploma Program on Public Economy Management,  
Class 1/2003  
King Prajadhipok's Institute
- Director Certification Program (DCP), Class 37/2003  
Thai Institute of Directors Association
- Mini MBA  
Berkeley University, U.S.A.

**Shareholding in the Company (%)**

Direct : - None - Indirect : - None -

**Family Relationship between Director and Executive Management** - None -

**Work Experience**

**Position in Listed Companies**

At present	Advisor Bangkok Expressway and Metro Public Company Limited
2003 - 2006	Managing Director Bangkok Expressway Public Company Limited
1989 - 1994	General Manager Bangkok Expressway Public Company Limited

**Position in other Companies**

1996 - 2003	Managing Director Northern Bangkok Expressway Company Limited
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**Mrs. Payao Marittanaporn**

**Age** 62 years  
**Position in the Company** Director  
 Risk Management Committee Member  
 Nomination and Remuneration  
 Committee Member

**Date of Appointment** 17 February 2015

**Educational Background / Training Profiles**

- Master of Business Administration  
Chulalongkorn University
- Higher Diploma in Auditing  
Thammasat University
- Bachelor of Accountancy  
Chulalongkorn University
- Director Certification Program (DCP), Class 48/2004,  
Thai Institute of Directors Association
- Role of the Compensation Committee (RCC), Class 9/2009  
Thai Institute of Directors Association
- Capital Market Academy Leader Program, Class 11/2010,  
Capital Market Academy (CMA)

**Shareholding in the Company (%)**

Direct : -None- Indirect : 0.000003

**Family Relationship between Director and Executive Management** -None-

**Work Experience**

**Position in Listed Companies**

2015 - Present Director / Corporate Governance and  
Risk Management Committee Member /  
Executive Director / Managing Director  
Bangkok Expressway and Metro Public Company  
Limited

2007 - 2015 Director / Executive Director / Managing Director  
Bangkok Expressway Public Company Limited

2013 - 2014 Director / Nomination and Remuneration Committee  
Member / Risk Management Committee Member  
TTW Public Company Limited

**Position in other Companies**

2004 - Present Director and Executive Director  
Northern Bangkok Expressway Company Limited

2007 - Present Acting Managing Director  
Northern Bangkok Expressway Company Limited

2011 - 2014 Director  
Xayaburi Power Company Limited



**Mr. Patarut Dardarananda**

**Age** 60 years  
**Position in the Company** Independent Director  
 Audit Committee Member  
 Risk Management Committee Member  
 Corporate Governance Committee  
 Member

**Date of Appointment** 12 December 2018

**Educational / Training**

- Doctor of Philosophy Program in Public Administration (Ph.D.  
Public Administration)  
Ramkhamhaeng University
- Master of Science in Engineering (Civil)  
Youngstown State University, Ohio, USA.
- Bachelor of Engineering (Civil)  
Chulalongkorn University
- Leadership Succession Program (LSP 1)  
Institute of Research and Development for Public Enterprises

**Shareholding in the Company (%)**

Direct : -None- Indirect : -None-

**Family Relationship between Director and Executive Management** - None -

**Work Experience**

**Position in Listed Companies**

- None -

**Position in other Companies**

2016 - Sep 2018 Permanent Secretary,  
The Bangkok Metropolitan Administration (BMA)

2015 - 2016 Deputy Permanent Secretary,  
The Bangkok Metropolitan Administration (BMA)

2014 - 2015 Director General of the Department of Public Works

2013 - 2016 Board of Directors  
Mass Rapid Transit Authority of Thailand

2012 - 2014 Deputy Director General,  
The Department of Public Works

2006 - 2012 Deputy Inspector General,  
Office of the Permanent Secretary



Mr. Shunsuke Murai

**Age** 53 years  
**Position in the Company** Director  
 Nomination and Remuneration  
 Committee Member

**Date of Appointment** 27 February 2018

**Educational / Training**

- Bachelor's degree, in Faculty of Law,  
 Nagoya University, Japan

**Shareholding in the Company (%)**

Direct : - None - Indirect : - None -

**Family Relationship between Director and Executive  
 Management** - None -

**Work Experience**

**Position in Listed Companies**

- None -

**Position in other Companies**

2018 - Present Divisional Operating Director Infrastructure Projects  
 Business Division Asia Pacific Business Unit  
**Mitsui & Co., Ltd. (Singapore)**

2016 General Manager Human Resources and General  
 Affairs Department Planning & Administrative  
 Division (Machinery & Infrastructure)

2014 General Manager Personnel & General Affairs  
 Department Infrastructure Projects Business Unit

2012 General Manager Third Department Third Projects  
 Development Division

2012 General Manager Second Department IPP  
 Business Management Division

2009 General Manager First Department Second Power  
 Project Development Division

2007 Deputy General Manager Investment Administration  
 Division

2004 General Manager Project Division  
**Mitsui & Co., Ltd. (Brazil)**

1999 Assistant General Manager Chemical Plant Division

1996 Manager Project Division

1989 Joined Chemical Plant Division  
**Mitsui & Co., Ltd. (Japan)**



Mr. Hideo Matsumoto

**Age** 46 years  
**Position in the Company** Director  
 Executive Committee Member  
 Risk Management Committee Member

**Date of Appointment** 21 December 2017

**Educational / Training**

- Bachelor of Arts in Policy Management (1996)  
 Keio University
- Director Certification Program (DCP), Class 256/2018  
 Thai Institute of Directors Association

**Shareholding in the Company (%)**

Direct : - None - Indirect : - None -

**Family Relationship between Director and Executive  
 Management** - None -

**Work Experience**

**Position in Listed Companies**

- None -

**Position in other Companies**

2017 - Present Director  
**Mitsui Water Holdings (Thailand) Co., Ltd.**

2017 - Present Senior Vice President & General Manager  
 Infrastructure Projects Division  
**Mitsui & Co., Ltd. (Thailand)**

2016 - 2017 Deputy General Manager  
 Fourth Department, First Projects Development  
 Division  
**Mitsui & Co., Ltd. (Tokyo Headquarters)**

2011 - 2016 Deputy General Manager  
 Third Department, First Projects Development Division  
**Mitsui & Co., Ltd. (Tokyo Headquarters)**

2005 - 2011 Deputy Project Director  
**Mitsui & Co., Ltd. (Thailand)**



**Ms. Walainut Trivisvavet**

<b>Age</b>	48 years
<b>Position in the Company</b>	Director Executive Committee Member Risk Management Committee Member Corporate Governance Committee Member Managing Director

#### Education / Training

- Master of Science in Administrative Studies, Sub-concentration : Financial Economics  
**Boston University**
- Bachelor of Business Administration,  
**Assumption University**
- Director Certification Program (DCP), class 201/2015,  
Thai Institute of Directors Association
- Advance Audit Committee Program (AACP), Class 20/2015,  
Thai Institute of Directors Association
- Company Reporting Program (CRP), Class 13/2015,  
Thai Institute of Directors Association
- Capital Market Academy Executive Program (CMA),  
Class 24/2017, Capital Market Academy
- Top Executive Program in Commerce and Trade (TEPCoT)  
11/2018 Commerce Academy, University of the Thai Chamber of Commerce
- Certification Program in Investor Relations, 2016,  
Thai Listed Companies Association
- Chief Financial Officer Certification Program (CFO), Class 19,  
The Federation of Accounting
- Advance Certificate Course in Public Economics Management  
for Executives, King Prajadhipok's Institute

#### Shareholding in the Company (%)

Direct : - None -                      Indirect : - None -

#### Family Relationship between Director and Executive Management

Mr. Plew Trivisvavet's Grandchild

#### Experience

##### Position in Listed Companies

2015 - 2018	Assistant Managing Director Administration Group <b>TTW Public Company Limited</b>
2014 - 2015	Assistant Managing Director Finance Department <b>Bangkok Expressway Public Company Limited</b>

##### Position in other Companies

2016 - Present	Director, Managing Director <b>Pathum Thani Water Company Limited</b>
2016 - Present	Director <b>Thai Water Operation Company Limited</b>
2014 - 2017	Director <b>Fahamorn Machinery Company Limited</b>
2014 - 2017	Director <b>R.S.B Construction Company Limited</b>



**Age** 59 years

**Positions in the Company** Assistant Managing Director,  
Operation Group  
Aging Engineering and Construction  
Director

#### Education / Training

- Bachelor's degree: Bachelor of Industrial Electrical Technology  
**King's Mongkut's Institute of Technology North Bangkok**
- Director Accreditation Program (DAP), Class 99/2012,  
**Thai Institute of Directors Association**
- Director Certification Program (DCP), class 170/2013,  
**Thai Institute of Directors Association**
- Business Reporting Program (BRP),  
**Thai Institute of Directors Association**
- Monitoring and Controlling Business Performance,  
**Thailand Management Association (TMA)**
- Strategic Risk Management,  
**Strategic Business Development Center Limited Company**
- Integrated Water Management for Executives, Class 3,  
**Thai Waterworks Association (TWWA)**

#### Shareholding in the Company (%)

Direct : - None - Indirect : - None -

#### Experience

Operation Director  
**TTW Public Company Limited**  
Operation Manager  
**Thai Water Operations Company Limited**  
Operation Director  
**BJT Water Company Limited**  
Maintenance Manager  
**BJT Water Company Limited**  
**Other Current Positions:**  
Director / Managing Director  
**Thai Water Operations Company Limited**



**Age** 46 years

**Positions in the Company** Finance and Accounting Director  
Acting Assistant Managing Director  
Administration Group

#### Education / Training

- Master's degree: Master of Accounting  
**Thammasart University**
- Bachelor's degree: Bachelor of Commerce and Accountancy  
**Chulalongkorn University**
- Director Certification Program (DCP), Class 121/2009,  
**Thai Institute of Directors Association**
- Director Accreditation Program (DAP), Class 79/2009,  
**Thai Institute of Directors Association**
- Business Reporting Program (BRP)  
**Thai Institute of Directors Association**
- TLCA Executive Development Program  
**Thai Listed Companies Association**
- Strategy Management Program  
**Fiscal policy research institute foundation**

#### Shareholding in the Company (%)

Direct : - None - Indirect : - None -

#### Experience

Director  
**Pathum Thani Water Company Limited**  
Director  
**Thai Water Operations Company Limited**  
Director  
**CK Power Public Company Limited**  
Director  
**Bangkhenchai Company Limited**  
Assistant Audit Manager  
**EY Office Limited (Formerly Ernst & Young Limited)**

#### Other current positions

- None -





**Ms. Sudarat Chiamchan**

**Age** 54 Years  
**Position in the Company** Corporate Affairs Director and Company Secretary

**Education / Training**

- Master of Management  
Mahidol University
- Bachelor of Business Administration (Accounting)  
Ramkhamhaeng University
- Director Certification Program (DCP), Class 186/2014  
Thai Institute of Directors Association
- Company Secretary Program (CSP), Class 43/2011  
Thai Institute of Directors Association
- Company Reporting Program (CRP), Class 2/2011  
Thai Institute of Directors Association
- Effective Minutes Taking (EMT), Class 24/2012  
Thai Institute of Directors Association
- Advance Audit Committee Program (AACCP), Class 20/2015  
Thai Institute of Directors Association
- Business Reporting Program (BRP)  
Thai Institute of Directors Association
- Board Nomination & Compensation Program (BNCP 1/2017)  
The Thai Institute of Directors Association
- Corporate Governance for Executives (CGE), Class 6/2016  
Thai Institute of Directors Association
- Boardroom Success through Financing & Investment (BFI)  
Thai Institute of Directors
- Orientation Course - CFO FOCUS ON FINANCIAL REPORTING,  
Federation of Accounting

**Shareholding in the Company (%)**

Direct : - None - Indirect : - None -

**Experience:**

Accounting and Finance Manager  
 PathumThani Water Company Limited  
 Accounting and Finance Manager  
 Index International Group Company Limited

**Other current positions**

- None -



**Mr. Hongthong Artit**

**Age** 52 Years  
**Position in the Company** Business Development Director  
**Education / Training**

- Master's degree: Master of Engineering (Infrastructure and Management)  
Kasetsart University
- Bachelor's degree: Bachelor of Engineer (Mechanical Engineering)  
King Mongkut's Institute of Technology North Bangkok
- TMA Thailand Management Day 2018  
Thailand Management Association (TMA)
- Business Reporting Program (BRP)  
Thai Institute of Directors Association
- Myanmar insight 2018,  
Thai Business Association of Myanmar
- International Field Trip: CLMV  
Thai Listed Companies Association
- Energy Symposium 2016,  
The Federation of Thai Industries

**Shareholding in the Company (%)**

Direct : 0.00001 Indirect : - None -

**Experience:**

Service Customer Director  
 TTW Public Company Limited  
 Operation Manager  
 PathumThani Water Company Limited  
 Chief of Engineering and Construction Division  
 TTW Public Company Limited  
 Pipeline Site Manager  
 JWTWCK Joint Venture

**Other current positions**

- None -



Mr. Pipat Katikul

**Age** 51 years  
**Position in the Company** Operation Director  
**Education / Training**

- Master's degree: Business Administration  
National Institute of Development Administration (NIDA)
- Master's degree: Computer and Engineering Management  
Assumption University
- Bachelor's degree: Bachelor of Science (Microbiology)  
King Mongkut's University of Technology Thonburi
- Water loss management  
Dhurakij Pundit University
- Monitoring and Controlling Business Performance,  
Thailand Management Association (TMA)
- Strategic Risk Management, Strategic Business Development  
Center Limited Company
- Business Reporting Program (BRP)  
Thai Institute of Directors Association
- Business Capability Enhancement Program (BCEP)  
Thai Institute of Directors Association

**Shareholding in the Company (%)**

Direct : - None - Indirect : - None -

**Experience:**

2015 - 2019 Acting Engineering and Construction Director  
TTW Public Company Limited

2015 Quality and Efficiency Manager  
Thai Water Operations Company Limited

2014 - 2015 Operation Manager - Pathum Thani Water Treatment Plant  
Thai Water Operations Company Limited

2011 - 2013 Business Development Manager  
Thai Tap Water Supply Public Company Limited

1997 - 2005 Operation Manager  
BJT Water Company Limited

**Other Current Positions**

- None -



Mr. Chatchawan Tianprasertkit

**Age** 53 years  
**Position in the Company** Acting Customer Relationship Management Director  
**Education / Training**

- Master's degree Master of Business Administration (Management)  
Sripatum University
- Bachelor's degree Faculty of Commerce and Accountancy, Department of Statistics, Computer Program  
Chulalongkorn University
- Business Reporting Program (BRP)  
Thai Institute of Directors Association
- Governance, Risk and Compliance;  
TRIS Academy of Management
- Internal Audit Certification Program,  
The Federation of Accounting Professions
- Water loss management,  
Dhurakij Pundit University
- Risk Management Program,  
Thai Institute of Directors Association
- Leadership for QMS and EMS, SGS, 2018

**Shareholding in the Company (%)**

Direct : - None - Indirect : - None -

**Experience:**

Manager - Internal Audit Division  
Information Technology Director  
Marketing Director  
TTW Public Company Limited  
Senior Manager - Business Development Division  
Bangkok Metro Public Company Limited  
Operation Support Manager - Operation Division  
Bangkok Metro Public Company Limited  
Manager - Software Applications for Business Administration  
Business Application Co., Ltd.  
Manager - Computer Division  
Siam Kayaba Company Limited

**Other Current Positions**

- None -



**Mrs. Busawan Pholprasert**

**Age** 46 years

**Position in the Company** Acting Human Resources and  
Administrative Director  
Human Resources Development  
Manager

#### Education / Training

- Master's degree: Master of Art - Public Administration  
**Kasetsart University**
- Bachelor's degree: Bachelor of Political Science  
**Thammasart University**
- Leadership for QMS and EMS,  
**SGS**
- Engaging Thailand's Workforce  
**ARIP Public Company Limited**
- The Effect of the minimum Wage and Compensation Management,  
**PMAT (Personnel Management Association of Thailand)**
- Risk Management,  
**Holistic Development Center Co., Ltd.**
- Preparation of Thailand's Industry for Transition towards Industry 4.0
- Building Employee Engagement during Change,  
**Dale Carnegie**
- New Business Challenges of the Digital Workforce,  
**Business Plus**

#### Shareholding in the Company (%)

Direct : - None - Indirect : - None -

#### Experience:

Human Resources Manager  
**Progress Software Co., Ltd.**  
Human Resources Manager  
**T.N Information System Co., Ltd.**

#### Other current positions

- None -

## // Shareholding by Directors and Executives in 2018

Director/Executive		Brought Forward as at January 1, 2018	Balance as at December 31, 2018	Changing	Shareholders (%)
1. Dr. Thanong Bidaya	Independent Director and Chairman of the Board of Directors	342,500	-	342,500	0.0085
2. Mr. Plew Trivisvavet	Vice Chairman of Board of Directors	1,100,000	200,000	900,000	0.0226
- Mrs. Saikasem Trivisvavet	Mr. Plew Trivisvavet's spouse	100,000	-	100,000	0.0025
3. Mr. Phongsarit Tantisuvanitchkul	Chairman of the Executive Committee	-	-	-	-
4. Mr. Phairuch Mekarpon	Independent Director	-	-	-	-
5. Mr. Somnuk Chaidejsuriya	Independent Director	-	-	-	-
6. Mr. Suvich Pungchareon	Director	-	-	-	-
7. Dr. Sombat Kitjalaksana	Director	1,000,100	-	-	0.0250
8. Mrs. Payao Marittanaporn	Director	-	-	-	-
- Mr. Prasert Marittanaporn	Mrs. Payao Marittanaporn's spouse	100	-	100	0.000003
9. Mr. Patarut Dardarananda	Independent Director	-	-	-	-
10. Mr. Shunsuke Murai	Director	-	-	-	-
11. Mr. Hideo Matsumoto	Director	-	-	-	-
12. Ms. Walainut Trivisvavet	Director and Managing Director	-	-	-	-
13. Mr. Tanat Siricharoen	Assistant Managing Director, Operations Group and Acting Engineering Director	-	-	-	-
14. Mr. Somkiat Pattamamongkolchai	Account and Finance Director Acting Assistant Managing Director, Administration Group	-	-	-	-
15. Ms. Sudarat Chiamchan	Corporate Affairs Director	-	-	-	-
16. Mr. Hongthong Artit	Business Development Director	400	-	400	0.00001
17. Mr. Pipat Katikul	Operation Division Director	-	-	-	-
18. Mr. Chatchawan Tienprasertkit	Acting Customer Relationship Management Director	-	-	-	-
19. Mrs. Busawan Pholprasert	Acting Human Resource and Administrative Director	-	-	-	-

# Activities for Society, Quality of Life, and Environment

## Sustainable Development Policy

TTW Public Company Limited (TTW) recognizes the importance of operating sustainable business in parallel with social development and environmental conservation by applying the Sustainable Development Goals (SDGs) as the guideline. The Company's business operation covers all economic, social and environmental dimensions under the principle of corporate governance and our main responsibilities to produce tap water that is clean, safe and meets international standard.

The Company realizes that the success and sustainability of the organization cannot only be measured by profit alone but also other important qualities such as being a good member of the society, operating the business under ethical code of conduct and regularly supporting and assisting the communities and persons with less opportunities in order to enable development and self-reliance.

We also realizes that strong social foundation is an important factor for creating sustainability under the Company's mission "To be Thailand's leading company in Water, Energy and Eco-Friendly Businesses." Our aim is also to create satisfaction and maximum benefit to stakeholders under the mission "Water Flows, Life Grows". The Company, therefore, determines to operate water production business under the integrated framework of corporate governance, risk management, personnel development and care, social responsibilities, environmental conservation and fair and ethical stakeholders' treatment.

Apart from operating the business under ethical code of conduct, the Company also determines to fulfill its social responsibilities through various social activities on a regular basis. The Company encouraged all employees to engage in all of the social activities relating to community sustainable development and environmental conservation. The Company's Corporate Social Responsibility (CSR) Department has the duties to provide knowledge and to perform activities under the policies and plans guided by the Sustainable Development Committee to ensure that the objectives are fulfilled and the activities are implemented within the allocated budget. The committee also reports to the Company's Board of Directors.

In the recent past, the Company stepped up the business operation towards the "sustainable development" under the Sustainable Development Goals (SDGs) in order to meet international standard and context. It also recognized the importance of Corporate Social Responsibility (CSR) works by including them as the major strategies to create the Company's brand image and shared value (CSV) in order to create mutual benefits between the Company and society. Some of the projects include the research project to conduct a study on how to develop products from tap water's sediment in order to reduce the burden to get rid of waste and to conserve the Company's environment while generating additional income and improving quality of life for the people in the community.

## Implementation and Reporting

The Company includes social responsibility report as a part of its annual report and publishes the separate "Sustainability Report" in order to report on the implemented activities that covered all 3 sustainable performances, namely, economic, social and environmental, including the dissemination of concept and results of social and environmental activities to stakeholders through the Company's web site: <http://www.ttw.plc.com> based on the Global Reporting Initiative (GRI Standard).





## Actions Taken In Compliance with Policy

The Company has formulated the following “Sustainable Development” policies.

1. To develop business process according to the main missions of the Company
2. To create consciousness among all levels of employees on social and environmental responsibilities.
3. To promote social and environmental activities in CSR process by focusing on the prevention of social and environmental impacts and the adoption of ISO 26000 as the guideline.
4. To promote the organization’s sustainable development based on Global Reporting Initiative (GRI)
5. To promote participation of all employees and business partners in CSR activities with a view to creating consciousness on “Sustainable Development” across the organization.
6. To recognize the importance and to promote business and social development and innovation that create added value to the Company, stakeholders, society and environment.

## Engagement in Social and Community Development

In realizing the importance of engagement in addressing the problem and development of community, TTW Public Company Limited (TTW) developed activities and projects, based on the expectations of the communities and the organization. Such activities and projects are approved by the management and are included in the annual budget. They are also reviewed by the Company’s Internal Control Auditor to ensure transparency. Moreover, the Company also give priority to children of the families in the community in the recruitment of personnel to fill in the job vacancies in order to increase incomes and to improve quality of life for the people in the community.

Moreover, in recognizing the importance of environmental responsibility, the Company has the policy to operate the business without causing negative impacts on environment, to conserve energy, to comprehensively manage the use of water resource and to create environmental conservation projects to ensure that natural resources and environment will be conserve for the future generations.





# Occupational Health and Safety

TTW realizes that occupational safety and health program is an integral part of the business operation and is directly related to both qualitative and quantitative productivity. Its implementation also leads to a sustainable coexistence with the surrounding communities. The company therefore focuses the efforts on creating knowledge, understanding, realization and conscience on occupational safety and health in all departments and among all levels of staffs, including senior executives and operational-levelled staff.

The company has formulated policies and managerial structure for occupational safety, health and environment in accordance with the standards, stipulated in the Occupational Safety, Health and Environment Act B.E. 2554 and other work safety-related laws. We use these as basic practical guidelines to help our employees to ensure safety standard in their works.

## Environmental Quality, Occupational Safety and Health Policies

Our company is determined to implement the environment quality, occupational safety and health activities by emphasizing on the participation of our personnel in order to ensure continuing development as follows.

1. Producing running water with quality that is responsive to the needs of customers.
2. Ensuring maximum satisfaction from direct and indirect customers.
3. Improving and developing knowledge, ability, skill and expertise of our employees on continuing basis to ensure that they have consciousness on environment quality and occupational safety and health.
4. Complying with the laws and requirements on the nature and problems relating to environment and work safety of the company.
5. Preventing pollution from the company's business activities that may affect natural environment, including the efficient use of energy and resources.
6. Preventing and mitigating accidents, danger and illness that occurred to our employees and those who involve with the operation of the company while performing the duties.
7. Preparing for any possible emergency incident and working to ensure that such incidents would not affect personnel and properties that are inside and outside of the company

The management was responsible to support on budget, manpower, time sufficiently and appropriately to drive quality, environment, occupational health and safety to be in accordance with the policies, objectives and goals set

## Occupational Safety, health and Environment Committee

TTW has elected and appointed the Occupational Safety, Health and Environment Committee to perform the duties that include the formulation of policies, action plans and training on occupational safety in order to prevent and decrease the number of occupational accidents, injury, illness, suffering or unsafety. The Committee's duties also include the submission of reports and recommendations on measures or guidelines to improve or correct the occupational safety standard so that they are in compliance with the occupational safety-related laws and occupational safety standard to the management. This is to ensure occupational safety for employees, contractors and third parties who perform their works or use the services of the company, including the survey on occupational safety performance, the reviewing of injury statistics, the setting of occupational safety reporting system. The company requires that employees at all level comply with the guidelines under the supervision of the Occupational Safety, Health and Environment Committee.

### Occupational Safety, health and Environment Committee

Name and Surname		Positions	Position in OHSEC
1. Mrs. Rungnapa	Maneeakasemsuk	Banglen Water Treatment Plant manager	Chairman
2. Mr. Anuchit	Ariya	Maintenances Section Manager	Vice Chairman
3. Mr. Suchat	Kraiphet	Safety Section Manager	Member
4. Mr. Suthon	Klinrod	Production Chief Supervisor	Member

Name and Surname		Positions	Position in OHSEC
5. Mr. Niphon	Sukwiboon	Production Chief Supervisor	Member
6. Mr. Suebsak	Chuchuen	Engineer	Member
7. Mr. Weerachai	Klaithin	Engineer	Member
8. Ms. Jiraphon	Kerdsiri	Quality Control Officer	Member
9. Ms. Nuttaporn	Jaiboon	Administration Officer	Member
10. Mr. Thongwut	Arto	Warehouse Officer	Member
11. Mr. Nipit	Wuttiwongkan	Safety Officer	Secretary

## Activities Related to Occupational Safety, Health and Environment in 2018

### Seminar and Training

The company has provided training on safety and environmental seminars, both courses as required by law such as safety officer supervisor courses, safety committee, work safety on electricity, etc. and courses on safety and the environment such as maintenance safety course, etc.

### Promotion campaign

The company has continuously organized a campaign to promote safety and the environment to create awareness among employees at all levels by conducting regular emergency drills such as Course for suppressing chlorine leakage with KIT-B equipment, Maintenance of chlorine systems and SCBA ventilation equipment and First aid and basic life support, etc.

### Employee health care

The company realizes that Good health of employees is an important factor that results employees being able to perform their duties efficiently.

The company has arranged the workplace and the environment to be pleasant for the good health as well as promoting the exercise for employees by establishing a running club, badminton club and football club to encourage employees to use their free time with exercise for good health.

### Occupational health and safety participation

Employee participation will create confidence trust with the organization, enthusiasm and cooperation to work to achieve the specified objectives and goal "Injury & Illness Free Operation" by creating a system that facilitates participation in safety activities of all employees at all levels continuously.

# // Report of the Compliance to Good Governance Principles

## Compliance with Good Governance Principles

Business administration and management with good corporate governance is a key factor indicating the company has employed efficient, equitable, transparent and verifiable systems for its administration and management in a way that is responsible for society and environment. Also building up the confidence and trust among shareholders, investors, stakeholders and all parties. Good corporate governance would also lead to have a sustainable growth in financial and investment resources of the company, as well as its competitiveness.

The Board of Directors has directed the company to operate its business in compliance with good corporate governance criteria defined by the Stock Exchange of Thailand (SET) and the relevant regulations set by Securities and Exchange Commission (SEC) and Capital Market Supervisory Board. The direction of the Board is also consistent with the principles of good corporate governance for listed companies, in accordance with ASEAN Corporate Governance Scorecard (ASEAN CG Scorecard). The company has the Corporate Governance Committee to supervise the operation to maintain its standards comparable to international level at all time, adopt an efficient management system, ensure a sustainable growth, and encourage the enhancement of the operation to achieve TTW Vision "To Be Thailand's Leading Company in Water, Energy and Eco-Friendly Businesses."

## Preparation of Corporate Governance Policy

Board of Directors has prepared a written Corporate Policy, based on the good corporate governance criteria and best practice criteria set by SET, to serve as operational guidelines for executive directors, the management and employees. The Corporate Governance Committee shall review corporate governance policy annually with an emphasis on the consideration about the administration and management; policy formulation that takes all stakeholders into account seriously and inclusively; the retention of public confidence; and the improvement of work efficiency on a regular basis with a consideration about environment conservation, efficient utilization of resources, and the promotion of morale, encouragement, safety and hygiene among employees.

Board of Directors has improved the principles of a good corporate governance in accordance with the vision and mission of the company to be a strategy in the business of the company and to suit the current economic situation. In addition, the Board of Directors has emphasized to the efficiency in duty of the sub-committees to be more independent. They have increased the number of independent directors in the nomination committee, and remuneration as shown in the structure and responsibility of the nomination committee and remuneration in Chapter 5 Responsibilities of the Board.

## Corporate Governance Policy

Board of Directors has approved to establishment the policies of a good corporate governance or the corporate governance of the company to the Board of Directors, executives and employees to be used as the principle of work as follows.

1. The Board of Directors strives to create more value for the company in the long run by supervising and operating with care and be careful according to the capacity for the maximum benefit of shareholders while taking care to prevent conflicts by taking responsibility for decisions and actions as directors of the Board of Directors.
2. The Board of Directors will treat the shareholders and the all parties equally.
3. The Board of Directors will operate with sincerity and can be checked by disclosing information to all concerned parties accurately, completely and in time.
4. The Board of Directors will always regard to the risk that could be occurred in the business. It will be controlled and manage the risk appropriately.
5. The Board of Directors will provide an Ethics of working for directors, executives and employees. The Board of Directors must be an example of Ethics, and being a good role model for executives and employees according to the corporate governance principles of the company.
6. The Board of Directors must have an annual self-evaluation on a regular basis to be used as a framework to monitor the performance of the committee of the company.

## Communication of corporate governance policy

The Board of Directors has disseminated corporate governance policies to stakeholders through the Company's website [www.ttwplc.com](http://www.ttwplc.com). In addition, the company has prepared a business Ethics, in order to be the principles and guidelines for directors, Executives and employees. As well as providing media and activities to enhance the understanding of a good corporate governance for the Company's employees. Instruct a good corporate governance and anti-corruption in orientation for new employees by emphasis to the principles of a good corporate governance. A good governance are a framework, revealing responsibility, improve continuously, sustainable growth as following.

- Responsibility
- Accountability
- Equitable Treatment
- Transparency
- Promotion of Best Practice

Last year, there are main activities as follows.

- Dissemination of the information and well practices about a good corporate governance to the directors and employees, including the company's information related to the Board of Directors' resolutions and the SET, to the employees in the company group via the corporate intranet system.
- Reporting of company operations according to the principles of a good corporate governance of the SET and recommendations to the Corporate Governance Committee and the Board of Directors knows.
- Training about a good corporate governance e.g. instruction and training about a good corporate governance for new employees of the company.

## Compliance with corporate governance for listed companies

The Stock Exchange of Thailand (SET) established "The Principles of Good Corporate Governance for Listed Companies 2012". The Securities and Exchange Commission (SEC) issued its "Corporate Governance for listed companies 2017", with effect from March 2017, which contains eight major practical guidelines.

- Principle 1 Establish clear leadership role and responsibilities of the board
- Principle 2 Define objectives that promote sustainable value creation
- Principle 3 Strengthen board effectiveness
- Principle 4 Ensure effective CEO and people management
- Principle 5 Nurture innovation and responsible business
- Principle 6 Strengthen effective risk management and internal control
- Principle 7 Ensure disclosure and financial integrity
- Principle 8 Ensure engagement and communication with shareholders

However, the company still compliance to the principles of 5 aspects of a good corporate governance strictly. In last year, the Board of Directors, executives and employees of the Company have complied with a corporate governance policy and monitored the results of the implementation of the plan continuously and consistently. As a result of this commitment, in the year 2018, the company received the award and certification of a good corporate governance as follows.

1. Being a listed company that has received the assessment of the quality of the Annual General Meeting of Shareholders year 2018 in full 100 points from the assessment by Thai Investors Association.
2. The company has been ranked as one of the 100 listed companies in the Stock Exchange of Thailand that is outstanding in sustainable business operations. (Environmental Social Governance (ESG100) in the Resources group for the third year consecutive.
3. High level of corporate governance in the survey by the Thai Institute of Directors Association (IOD).
4. The company has been selected to be in "SET THSI Index Sustainability Index" from the Stock Exchange of Thailand to be one of 45 companies that have passed the criteria and are in "SET THSI Index Sustainability Index", which is the first sustainability index in the Thai capital market.

In 2018 Thai Institute of Directors conducted Annual Corporate Governance Survey for the year 2018 to monitor the development of corporate governance among Thai listed companies. The company also prepared data presentation form in accordance with the criteria of Corporate Governance Report of Thai Listed Companies (CGR) TTW had operated its business in compliance with the principles of good corporate governance in such 5 areas as follows:

## Section 1 Right of Shareholders

As TTW realized the importance of shareholders as the investors in stock exchange market and as the owners of the company; therefore, TTW encouraged the shareholders to exercise their basic legal rights such as eligibility in having a share in company's profit, in trading or transferring shares, receiving news and information of the company adequately, attending shareholders meeting to vote to appoint or remove directors, proposing compensation paid for directors, appointing auditors and proposing audit fee, and taking parts in any matters that may affect the company. Apart from promoting shareholders to exercise their basic rights, TTW supervised and treated shareholders equally, such as providing significant and updated information via website; providing an opportunity for shareholders to propose an agenda of the meeting and nominate a person for be appointed as a director; organizing a company visit for shareholders, providing an opportunity for them to participate in CSR activities, and refraining from committing any actions that would violate or deprive the rights of shareholders.

### Organizing Shareholders Meeting

As Board of Directors realized the importance of shareholders meeting, so the company organized this meeting within 4 months after the end of accounting period in order that the shareholders could participate in the acknowledgement of the company's performance. If there was any urgent requirement to consider a special agenda that might affect the benefits of shareholders, and that required the approval from shareholders, the Board of Directors might call for an extraordinary general meeting of shareholders on a case by case basis. In organizing the annual general meeting of shareholders, the company conducted everything in compliance with AGM Checklist prepared by Thai Investors Association, Thai Listed Companies Association, and Securities and Exchange Commission (SEC) as follows.

#### Before the meeting day

The company prepared meeting document containing all significant information required for using in a consideration for voting by the shareholders. These documents were distributed to shareholders in advance and the shareholders were encouraged to attend the general annual meeting of shareholders. The company also provided facilitation for the shareholders to exercise their rights of voting in case that they could not attend the meeting themselves. All of these are detailed below

- a. Notified meeting schedule and agenda to shareholders for their acknowledgement in advance via information communication system of SET and website of the company before sending the actual documents to shareholders on 13 March 2018, which was not less than 30 days prior to the date of meeting; so that the shareholders could reserve their time to attend the meeting
- b. Sent meeting invitation letter specifying clear details separately for each agenda. The agenda of 2018 annual general meeting of shareholders consisted of the topics for consideration as defined in Section 4 of Company's by laws, "Shareholders Meeting," by separating the topic of 'The appointment new directors to replace the directors whose tenures are expired' and the topic of 'The consideration of compensation paid to directors' as two separated agenda. Each agenda consisted of facts and reasons, opinion of the Board, criteria and method for attending the meeting and 3 forms of Proxy (Proxy Form A, Proxy Form B and Proxy Form C) as defined by the Department of Business Development, the Ministry of Commerce. These invitation letters, enclosed with a copy of annual report, were sent to shareholders on 28 March 2018 for their acknowledgement, which was before the meeting not less than 21 days prior to the date of the meeting. Announcements were also made in newspapers for three consecutive days as to summon shareholders meeting in advance with sufficient time for the shareholders to prepare themselves for the meeting. All related information and data of the meeting were also displayed on TTW website for the shareholders to review in advance. Some telephone numbers were also provided for inquiry about additional information, and for presenting some significant information to fulfill the essence of the information required for making a proper decision in the agenda of appointing the directors.
- c. Provided opportunity for shareholders to send questions in advance about the issues in proposed agenda that required a clarification, by sending via email to [cg@ttwplc.com](mailto:cg@ttwplc.com) or via fax number 02-420-6064; so that shareholders would obtain utmost benefits from the meeting and that their rights could be protected extensively

#### Shareholders Meeting Day

TTW encouraged shareholders to exercise their rights in attending and voting in shareholders meeting by providing facilitation for those who would attend the meeting; conducting the meeting transparently through a verifiable mechanism; not committing any actions that would violate or deprive the rights of shareholders; and providing opportunity for shareholders to ask questions and share their opinions openly, as described below

- a. Directors, executive management and auditors had to attend the meeting collectively for giving responses to the questions raised by shareholders and acknowledge their opinions. In 2018, Chairman and directors, totally 12 persons, attended shareholders meeting. This was equal to 100% of the total number of directors, Chairman of all subsidiary committees also attended. Chairman and the directors who took role as the members in subsidiary committees gave explanation about related details of each agenda and gave responses to the questions raised by shareholders.
- b. Set up exhibition and provided information regarding business operation of the company. In this event, executive management from Investors Relation Unit (under Corporate Affairs Division), Finance and Accounting Division, Business Development Division, Operation Division, and Engineering and Construction Division gave a warm welcome to shareholders and responses to their questions.
- c. Allowed shareholders who arrived after the meeting had started to exercise their rights to vote on the agenda that was being considered during the given moment, of which the final resolutions had not been made.
- d. Conducted the meeting following the sequence of agenda as defined in the invitation letter. The presentation of each agenda began with background, rationale, necessity and proposed suggestions. For the details of all significant data, the shareholders had already been informed through the invitation letter
- e. Provided opportunity for all shareholders to share opinions and ask questions equally during the discussion of each agenda. The Chairman of the meeting gave importance to all opinions and questions; and gave responses to all the raised issues. The minute of the meeting was also taken comprehensively.
- f. Contracted a legal office under the name 'Offices of N&K Ltd.' as the auditor to inspect the documents of shareholders or their proxies who were eligible to attend the meeting; assess the quorum; check the compliance of voting method and vote counting with related provisions in the by laws of the company, as well as the declaration made by the Chairman for the collection of ballots from shareholders; and inspect the resolution outcomes and voting results. The auditor commented that the shareholders meeting and voting were conducted transparently and in compliance with the by laws of the company, applicable laws, and best practice procedures of SET regarding good governance; and that the company paid good respect to the rights of shareholders in attending the meeting and sharing opinions.
- g. Allowed two shareholders to represent all shareholders who attended the meeting as the witnesses in vote counting.

For Annual General Meeting of Shareholders in 2018, the number of attendants at the closing of the meeting was totaled as 914 for the shareholders who attended the meeting themselves and for those who attended by proxies. The number of shares collectively hold by these attendants was 3,255,912,863 (which was equal to 81.60% of the total sold shares). These numbers increased from the year before. That is, in 2017, the numbers of shareholders who attended the meeting by themselves and those by proxies were 839 and the number of shares collectively hold by these attendants was 3,178,754,965 (equivalent to 79.67% of the total sold shares).

### After shareholders Meeting

- a. After the General Meeting of Shareholders, TTW prepared the minute which documented the list of names and positions of the directors and executive management who attended the meeting; voting and vote counting method; the use of ballots; suggestions of the Board; enquiry and suggestions of shareholders; explanation from executive management; the voting record including both agreement, disagreement and abstention of votes; and the resolutions reached for each agenda. This minute was publicized on TTW website ([www.ttwplc.com](http://www.ttwplc.com)) on May 3, 2018 which was in compliance with SET criteria defining that this needed to be done within 14 days after the meeting date.
- b. Managed to have a video record of the atmosphere in the meeting and publicized this on TTW website; so that the shareholders who could not attend the meeting themselves could view and acknowledge.
- c. After the Shareholders Meeting approved the dividend payout, TTW notified about this resolution and the details of dividend payout for shareholders to acknowledge via electronic media (SET Portal) of SET; coordinated with TSD Registrar; and made an announcement of dividend payout in newspapers to ensure that shareholders would obtain dividend completely and correctly.

## Section 2 Equitable Treatment of Shareholders

The Board of Directors has defined a policy on equitable treatment of shareholders in the corporate governance policy, as implemented below.

- Publicized meeting documents on its website 30 days ahead of the meeting and delivered them to the shareholders 22 days ahead of the meeting.
- Allowed the shareholders to propose additional AGM agenda items and nominate directors from September 1 to December 31. TTW disclosed the criteria and methods at its website and informed the shareholders through SET's channels. The



Board's policy is against adding agenda items without prior notice, particularly crucial items for which the shareholders need time to study before making a decision.

- Supported the shareholders' use of proxy forms to steer voting at the meeting (Form B) and nominated two independent directors as proxy alternatives at the meeting.
- Used ballots on every agenda item, particularly that dealing with directors' election where individual directors were voted on. To this end, the votes equaled the number of shares held for the election of one director.
- Required that directors with vested interests should have no votes and stay outside the meeting on such agenda item, as mentioned in the corporate governance policy.
- Defined practices for employees on the maintaining of TTW's confidential information and avoidance of benefit seeking for themselves by exploiting such confidential information, as mentioned in the corporate governance policy.

## Section 3 Roles of Stakeholders

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Apart from giving supervision to and preserving the rights of shareholders, the Board also adopted a policy to protect the rights of all stakeholders which emphasized the issues that might affect business operation directly; as well as the issues considered as necessary duties to be performed for society in general. Therefore, in good corporate governance policy and in the code of ethics for business operation, the Board had clearly provided the guidelines for fulfilling the needs of stakeholders in each group; so that the executive directors and employees could use as the basis for their operation. These guidelines could be summarized as below.

### Employees

TTW treats employees equally and fairly without any exception of domicile, race, religion, gender, marital status, language or position. TTW does not use or support the use of child labor; and does not support human trafficking and all forms of fraud and corruption. TTW organizes knowledge training for employees to learn about the policy and practice guidelines regarding the actions against fraud and corruption. TTW has a policy and guideline in place regarding the remunerations and welfare benefits for employees. The Company pays remunerations to employees at an appropriate and fair rate; and the paying scale of the company is comparable to that of other companies in the same industry. The company also supervises the implementation of welfare benefits policy in subsidiary and affiliated companies to provide benefits and welfares more excessively than legal requirement. For example, the company has established the Provident Fund with the rates of employees' contribution appropriate for the length of employment of each one, ranging from 5% to 10%; organized annual physical checkup, provides free treatment for illnesses in accordance with a respective health benefits scheme; and maintained good environment of the workplace by adopting a policy and practice guide regarding safety and hygiene in the workplace. The company also provides office cars for the executive management who hold a managerial position of a department or higher; so they can have more flexibility and convenience in performing their jobs. The company also promotes various activities for employees, such as the establishment of a jogging club, badminton club, soccer club, and so on. TTW emphasizes the importance of a long-term human resource development, as well as the provision of opportunity for employees to learn and develop their capacities for achieving a progress in career path and good quality of life in the future. To this end, the company has adopted a professional management system in human resource management in order to maximize the capacity of employees. TTW has encouraged and supported employees at all levels to further their education and acquire new skills through the participation in the workshops organized by leading institutions. The company has prepared employee handbook for all employees to acknowledge clearly about TTW policies and their eligibility for benefits. Furthermore, the company has adopted a policy and practice guidelines regarding the development of knowledge and capabilities among employees, as well as the allotment of training hours, based on the belief that personnel are the most precious resource for driving the organization together toward the achievement of the goals. Hence, the company has a strong commitment to develop its personnel for the sake of better knowledge and capability, as well as a better life quality among them. With regard to the path of learning and development among employees, TTW has developed appropriate learning programs for each period throughout of the course of employment of the employees starting from the first day to the date of retirement. TTW has fostered the development of employees' participation continuously by conducting employee satisfaction survey and employee engagement survey; and by allowing the participation of employees in the management of employees' welfare, occupational health and safety issues through Safety and Occupational Health Committee. TTW has promoted and supported the enhancement of employees' knowledge through the contribution of time, budgets, and the opportunity for career path progression.

To ensure that TTW would have qualified personnel and enough manpower for running its current business smoothly (which include tap water production and distribution; and tap water and wastewater management); one important factor is to develop the personnel of the company to gain knowledge, capabilities and preparedness for entering into any new businesses. Hence, the company has defined a frame of personnel development for each position, which includes the setting up of a development plan, the

preparation for the development, and the implementation of such development. In this regard, the company has analyzed and defined the Core Competency, Managerial Competency and Functional Competency; and used them as the frame for the development.

### Evaluation of Work Performance and Career Development

Employees in all levels who receive remuneration on a monthly basis are subject to a work performance evaluation at the end of each year. The goals and key performance indicators (KPIs) will be developed individually for each employee based on expected achievement of works, competency and development. The results of the evaluation in three areas (including core competency, managerial competency and functional competency in accordance with the regular development scheme of the company) will be used to set up a priority and the goals of the development. Individual development plan for each employee emphasizes the learning and development from hand-on experience, interpersonal relationship and formal training.

### Customers

As the manufacturer and distributor of tap water, TTW strictly observes the obligated commitment toward its customers. The products and services are delivered to all customers with an emphasis on cleanness, adequacy and continuity, and based on the principles of equitability as well as the promotion of sustainable relationship between the company and customers. TTW has defined a concrete policy and practice guidelines for providing services to customers with due responsibility.

1. Provide accurate information, sufficient and up to date for customers about the products and services without saying exceeding the truth that causes customers misunderstand about the quality, quantity or any conditions of that product or service.
2. Comply with various conditions strictly for customers. In case that any conditions cannot be met, customers must be notified to find the solutions to solve the problems.
3. Contact with customers politely, effective and should be reliable for customers.
4. Provide a system and process for customers to complain about quality, quantity, safety of products and services. Including the speed of response or delivery, and the utmost action to allow customers to get a quick response.
5. Maintain customers' secrets and do not use them for either the private benefit or those who are wrongfully involved.
6. Do not ask or receive any benefits that implies an act that is dishonest to the customer.

In 2018, no dispute occurred between the company and customers. In the business sector of tap water manufacturing and distribution, TTW was able to produce tap water for the customers in line with the terms and conditions set in the contracts. Overall, TTW had the capacity for supplying tap water beyond the criteria set in the sale and purchase contracts of tap water; and been able to produce tap water in compliance with WHO standards

### Creditors

TTW observes the obligated commitment it has for all creditors by strictly conforming to terms and conditions of loan contracts without concealing actual financial status, and by providing financial information to creditors periodically. TTW operates its business based on solid principles and in a disciplinary manner. The company manages its capital in line with the proportion of the debts. TTW has defined the policy and practice guidelines on how to deal with creditors properly, so as to establish the confidence and reliability in the eyes of creditors. The company adheres to the principles of practice as below.

1. The company shall make the repayment of all debts, loans and interests; and fulfill the responsibilities for all collaterals. The company shall strictly comply with the terms and conditions of contracts and agreements.
2. In a case that TTW cannot fulfill the conditions set in agreements, TTW shall notify the creditors in advance in order to mutually find a solution.

In 2018, TTW and its subsidiary companies were able to completely fulfill all the terms and conditions that had been agreed with creditors; and never committed any defaults on loans.

### Business Counterparts

The major stakeholders of TTW are business counterparts from outside (external service providers). TTW selects its counterparts by considering whether their business strategies are consistent with that of TTW, which may involve competitiveness, continuity of business, customer protection and service, and risk management methods. TTW has formulated the policies for dealing with counterparts properly which emphasize fair treatment to them, as overseen and directed by the company in accordance with its bylaws. Counterpart Selection Criteria of TTW as follows.

1. Follow the quality policies, environment, sanitation health and safety of the company.
2. Complying strictly with the regulations in order to work safety of the contractor.
3. Do not use child labor under the age of eighteen years to work.

4. In the case of business partners using foreign workers in the workplace, documents or permits must be obtained from the relevant government agencies to show to the company. They should have received permission or approval from the company and / or those of the company assign only.
5. Treat their workers with equality and must not violate human rights or good humanitarian principles
6. Act or take care of their labor as appropriate and in accordance with the Labor Protection Act that was enforced at that time.

With these areas of selection criteria, TTW has been able to maintain the excellent quality of tap water manufacturing and distribution, free from any potential risks upon customers.

In 2017, no dispute occurred between TTW or its subsidiary companies and business counterparts or contractual counterparties. For resist corruption, bribery and graft.

## Competitors

TTW treats business competitors within a frame of proper competition and does not take advantage over the competitors through an illegal method. TTW has defined rules, criteria and standards that are favorable for working together with the competitors. For example, TTW shall not search for business information of counterparts and competitors in a wrongful way; and shall not destroy the reputation of competitors by making a negative accusation towards them. TTW has adopted a concrete policy about how to treat the competitors fairly and responsibly.

1. Do not participate in the agreement between the company and its competitors.
2. Do not make agreements with competitors that restrict inappropriate competition, such as discussions about costs or pricing with competitors.
3. Be careful in participating in research, exchanging information or participating in any activities with competitors if they wish to use any information to use from the public sources first
4. Do not make any agreements which limit business opportunities without unfair treatment to business partners, dealer or other person.
5. In the event that the company will join the business overseas by joint investment, merger, merger or acquisition of other operators the responsible agency must check the laws and regulations about the prevention of non-discrimination or trade competition of that country.
6. Do not discriminate in any actions of the company to stakeholders to be affected by that operation.

In 2018, no dispute occurred between TTW or its subsidiary companies and the competitors.

## Communities and Society

TTW operates its business with a cautious concern about communities and society, especially the communities where TTW has an operation in. It has been included in the mission of TTW that the company shall be a good member of society and extend attentiveness towards communities. Therefore, this has been a part of duties and responsibilities to be performed and taken by the management and all employees, starting from providing true and update information, living with communities peacefully by paying respect to their cultures and traditions, taking part in developing good quality of life for community people, and cooperating with communities in developing lively environment of localities, which would lead to sustainable development for society as a whole. As well as participation the development a quality of life and Co-operate with local creative communities and social for sustainability.

## Promotion and development “Quality of community life” in the area around the Supply factory

The company gives importance to communities around the company's water supply regularly by supporting initiatives and develop various projects that covers both education occupational hygiene, as well as environmental care for better quality of life for people in the community. The company has operated as a project and activities continuously. And can be divided into 3 types of projects, consisting of development of community life in the area around the water treatment plant In the promotion of water conservation learning and the conservation of upstream forests and the environment which the Board of Directors has clearly defined as a policy regarding fair treatment and social responsibility and disclose the practice

In 2018, the company granted scholarships for the year 2018 to students in 3 service areas, namely Nakhon Pathom, Samut Sakhon and Pathum Thani. There were 23 schools, each with 10 scholarships, each offering 3,000 baht for students studying in kindergarten to secondary level. in the beginning with good grades And donated lunch funds to 3 special education centers, with Deputy Prime Minister Air Chief Marshal Prajin Chan Tong being the chairman and over 130 participants including the Deputy Prime Minister's Office. Executive Office of Nakhon Pathom Primary Educational Service Area Office 2, Samut Sakhon Primary Educational Service Area Office Pathumthani Primary Education Area Office 1 and District 2, teachers and students representatives as well as the management and staff of the company.

On November 9, 2018 Pathum Thani Water Company Limited, a subsidiary of the Company organized a ceremony to unite the people in the service area of Pathum Thani Water at Ban Phrao Temple in Pathum Thani Province, it is a continuation of important Buddhist traditions in Thailand. The company and the spiritual person participated in the Kathin merit making in the amount of 1,581,716 baht.

## Environmental Implementation

TTW is well aware that operating a business without responsibility would cause severe impacts on environment, especially in the communities where TTW operates its business. Therefore, TTW has a strong commitment to protect and conserve environment by giving importance as if it is a business operating factor of TTW. However, according to the experience of TTW in operating its business for several years, TTW realizes very well that by conducting everything in compliance with rules and regulations alone is not effective enough for the protection and conservation of environment. There are other important factors to be considered apart from abiding by the defined rules and regulations, which include the development of internal action plan for emergency situations, the quality control system and regular procurement of advance technologies for mitigating the impacts on environment. In order to ensure the compliance with the rules and regulations regarding emergency situations and quality control system, TTW has adopted a policy for running its business following the environmental standards and safety in waste management and noise in accordance with the International Standard System ISO 14001: 2004

The result of operation and measurements of various environmental and safety qualities will be stored systematically and has been regularly monitored by the safety inspection agency.

## Environmental Achievements

1. Annual meeting was organized every year to consider and discuss the issues related to environmental laws.
2. Environmental protection policy was set up in accordance with TISI Standard 14001. TTW adopted this policy to ensure the sustainability of environment protection and conservation in favor of better living condition (as detailed in "TISI Standard of Environmental Management System 14001 (ISO 14001)").
3. Goals and objectives of environmental management has been defined and assigned to be achieved by employees inside the organization and those working under the supervision of other work units in various operating sites. The durations of operation and implementation have also been defined clearly. TTW is well aware that training and selling ideas to employees at all levels would lead to achievement of environmental policy.
4. TTW conducted an assessment of significant factors that might cause environmental impacts on the activities of the organization and found that the regulations and procedures currently employed by TTW could effectively reduce the impacts on environments.
5. In-house training project was established for all employees in accordance with environmental management policy with an aim to instill and raise the awareness regarding the environment. This training project organized training sessions both at the headquarters and affiliated work units.
6. TTW has put best efforts in convincing and encouraging all business counterparts to comply with environmental standards.
7. Set the policies to promote efficient of resources

## Educating and training employees on environmental matters

Environmental importance the Problem which arises mainly from employees is the lack of real understanding. TTW therefore has a guideline to cultivate consciousness to all employees involved both directly and indirectly. They receive environmental management training there are courses that employees are trained as follows.

1. Green Building Development Course in Industrial Estate
2. Work safety and environmental awareness courses
3. Personnel development courses to enhance the capability and create a network of people responsible for energy.

## Efficient Use Resources

TTW supports the recycling of materials through a promoting campaign for efficient use of resources, such as using both sides of the paper, turning off air-conditioners and electricity during an office break or during a long absence of executive management from their rooms, and using a car pool for a same operation or direction. The implementation of these projects may not yield a clear result in term of reduction in energy costs or expenditures; however, it would help develop personal awareness that employees. TTW has established policies and guidelines as follows:

1. To operate and develop energy management system appropriately. It is regarded as a part of TTW's business operation and has to be implemented in accordance with laws and other relevant regulations.

2. To continuously improve the energy efficiency which is appropriate to business nature, technology and to follow the best practice
3. To set TTW's annual plan and goal for the energy conservation appropriately in each year and communicate to all employees for accurate understanding and compliance
4. TTW regards that energy conservation is responsibility of all executives and employees at all levels to cooperate and follow the measure in order to accomplish its goals
5. To support human resources, budget, time as well as training courses, and encourage all employees' participation through presenting their opinions that are valuable to energy management.
6. The Management and Green Committee will review and revise the energy conservation policy, goal and energy management plan to ensure their appropriateness and consistency with current situation on an annual basis.

## Respect to Human Rights

TTW supports the conduct in compliance with "Universal Declaration of Human Rights" and other international standards of human rights by refraining from formulating any policies that would violate the human rights; and by operating its business in line with international standards of human rights. TTW also organized training for new employees regarding the code of ethics and human rights policy of the company. In 2016, TTW announced a whistle blower policy as the channel for employees to submit the complaints about corruption, the violation of rules and regulations, or unfair treatment, to related work units. The activities defined by TTW in relation to human rights indicates very well that TTW gives a serious concern on transparency and the compliance with good corporate governance principles.

In 2018, TTW did not receive any complaints regarding the violation of human rights from employees, business counterparts and local people in TTW's operating areas. So, there is a certain level of confidence that TTW operation has not imposed (or does not have a potential to cause) any effects on local communities. The policies defined by the Board of Directors for all the management and all employees to refrain from violating the human rights, and to comply with Universal Declaration of Human Rights, are as follows.

- Give priority to basic human rights to promote respect for rights and freedoms by not discriminating against or with views on race, color, religion, sex, nationality, age, education, disability or any other status that is considered international human rights.
- Equally treat every process of employment, from recruitment to compensation including working hours and holidays, performance evaluation, training and development progress planning and others aspects without discrimination.
- The company does not use forced labor, child labor and/or illegal foreign workers including punishment that is physical and psychological abuse of employees regardless of whether it is threatening, detaining or any form of abuse or violence.
- The company will treat all employees with equality, provide equal opportunities to work under the rules and regulations of work laws and make announcements from the company which are lawful including allowing employees to express opinions, complaints, rights to access the process of hearing; and clarification before disciplinary action within the organization.
- The company encourages employees to exercise their rights as citizens by constitutionality. And other laws associated and will not violate human rights of any stakeholders related to the company when there is a conflict or political instability.
- The company and all employees do not support corruption related to any business of partners, customers or other stakeholders which violates International Human Rights' principles and/or corruption.

## Non-infringement of Intellectual Property and Copyright

TTW has adopted the policies and practice guidelines regarding the non-infringement of intellectual property or copyright. TTW has a team of risk management officers chaired by the Managing Director. This team shall submit the report on the implementation of this matter to Risk Management Committee for review, which covers the mandatory requirement for all employees to sign their names in an agreement that they shall not commit any crimes related to computer use, and any infringement of intellectual property. TTW has adopted a policy regarding the use of information technology system of TTW Group and subsidiary companies. The work applications or software programs of employees are inspected to prevent the use of infringed or non-work-related software.

1. Comply with the laws related to intellectual property of Thailand and all countries where the company go into business which is considered the basic norm.
2. Reveal which work, invention and any knowledge caused by the performance of duties or support promoted by the company and let the supervisor know correctly, completely and immediately.
3. Maintain and protect the intellectual property rights of the company both inside and outside the country including respecting and not violating the intellectual property rights of others.
4. Maintain important documents trade secrets and any other information that is confidential to the company, business partners and stakeholders in a safe place. There are appropriate and standardized access methods that are not disclosed to other

unrelated persons. This duty continues to be in effect irrespective of employment status as an executive or employee of the company.

5. Do not use intellectual property and confidential information of the company, partners and stakeholders to reproduce, modify or use in any way. For personal benefits or other persons without permission.
6. Report to the supervisor when seeing an action that is a violation of intellectual property or may lead to a violation of intellectual property or actions that may cause any disputes about the company's intellectual property or another person.
7. Support cooperation in intellectual property with external agencies, both government and private sectors.

### Anti-corruption and Bribery

TTW has adopted zero tolerance policy regarding the corruption and bribery disclosed on the Company website. Board of Directors, executive management, supervisors, employees in all levels, or any related persons are prohibited from involving in all forms of corruptions in any business transactions; and they shall comply with rules, regulations and laws of any countries that TTW has been dealing a business with. This policy shall be reviewed on a regular basis to identify a necessary revision for catching up with the new amendments of rules, regulations, standards and laws; and with the changes in business.

TTW has adopted a policy on anti-corruption and bribery, and has defined the principles in the code of business ethics prohibiting the employees from requesting or receiving any benefits or assets that may motivate them to perform their duties in a wrongful way, omit the performance of some duties, or cause the company to lose a rightful benefit. Employees are also prohibited from offering or presenting benefits or assets to outsiders to motivate such persons to commit a wrongful action or illegally omit an action in favor of a malpractice in his/her position.

TTW announced its policies and practice guidelines regarding anti-corruption and bribery on 21 October 2016 on and these have been in effect ever since.

### Training and communication

In 2018, the company communicated and organized training to educate employees, executives about policies and guidelines on anti-corruption. Including related policies, such as business ethics conflict of interest policy Whistleblower Policy the Company has provided knowledge and guidelines on anti-corruption with executives at the 2nd Executive Meeting (Management Briefing Meeting) on July 18, 2018. Employees at all levels have access to anti-corruption policies. And various policies via the company's website.

### Risk assessment

In 2018, the Risk Management Committee assessed the potential for corruption by assessing the risk of corruption, separated from other risks In particular, and reporting risks to the Board of Directors with an internal audit unit to supervise the implementation of the risk assessment report.

### Guidelines for prevention and monitoring of fraud and corruption risks

1. Provide an inspection process evaluate internal control systems and risk management covering important systems such as procurement systems. Contracting Budgeting and control system accounting system, payment system, etc. in order to prevent and monitor the risk of fraud and corruption including giving suggestions about appropriate solutions
2. Provide channels to receive information about clues or complaints of violations offense or business ethics of the company or guidelines for preventing involvement in corruption or doubts in financial reports or internal control system with a policy to protect information providers or clues and which will keep the information of the information provider confidential Including measures to check and determine penalties discipline of the Company and / or related laws In the event that you can contact the whistleblower or the complainant, the company will notify the result of the operation in writing.
3. The head of the relevant department is responsible for monitoring the operation. Improvements to correct errors (if any) and report to authorized persons respectively.

The company provides communication guidelines for prevention of involvement in corruption by publishing on various channels such as the intranet of the group and on the company's website In order for the management and all employees acknowledge and abide by

### Channels for reporting clues or complaints

The Board of Directors has set up measures to report issues or complaints of unlawful conduct or behavior that may indicate corruption or misconduct of individuals in the organization, both from employees and other stakeholders Including incorrect financial reports or defective internal control system there is a mechanism to protect employees and informants of issues by creating a secret



database system that is only accessible to related parties to allow stakeholders to participate in monitoring the interests of the company more efficiently. In case of complaints that there may be an offense, there will be an investigation committee which is a representative from the division that has no interest in the matter to consider, investigate and implement the regulations with the following channels:

- Send electronic mail to the supervisor or internal audit
- Mail to the Chairman of the Audit Committee or Managing Director as follows: TTW Public Company Limited 30/130 Moo 12, Phutthamonthon Sai 5 Road, Rai Khing Subdistrict, Sam Phran District, Nakhon Pathom Province 73210

## Complaint and clue measures

TTW has provided measures for complaints and issues by disseminating such measures in the Principles of Corporate Governance. And on the website of the company and reviewed these measures in order to ensure that complaints received are effective, deal and complete and also helps in tracking, supervise and monitor the performance of directors, executives and employees of the TTW Group to comply with laws, regulations, principles of corporate governance, business ethics and not taking any action that may indicate fraud.

## Providing protection to those who report complaints or whistleblowers and related persons

Complainants or whistleblowers of violations or non-compliance with laws will receive appropriate and fair protection from TTW, for example, without changing job positions, job description, workplace, suspension, threaten, disrupt work practice, dismissal or any other action. That is not fair to those who report the complaint or the informant for information about the complaint. TTW will keep it confidential, not disclosed to unrelated people except those that need to be disclosed in accordance with the law if there is a deliberate violation of the information being released. TTW will proceed with punishment according to TTW regulations and / or take legal action as the case may be.

## Action when receiving complaints

1. The independent director will appoint the working group to collect the complaint.
2. Working group assigned will consider screening information to propose steps and proper management methods.
3. The working group that has been assigned will present the measures that have violated or activities complying with the code of conduct, policies for the Board of Directors to consider with regard to total damage.
4. Chairman of the Audit Committee or independent director or company secretary will report to the Board of Directors for acknowledgment and report to the stakeholders who are the complainants if the complainant discloses himself.

In 2018, there were no complaints from stakeholders.

## Competitor Treatment

Business competitors are the outsiders that TTW must compete with throughout the course of business operation. However, the competition must be carried out fairly without a use of distorted or fake information, or any other improper methods in contrary to the principles of good competition. TTW is the biggest manufacturer and distributor of tap water in Thailand. The company produces and distributes tap water to Provincial Waterworks Authority, which is the business counterpart of TTW. The company does not have any direct competitors at all. Despite this fact, TTW still managed to have a policy and practice guidelines in place for proper treatment against competitors.

1. Treat competitors under the framework of the rules of good and fair competition.
2. Conduct under good competition framework.
3. Do not destroy the reputation of the trade competitors by accusing in the wrong way and without honest information.
4. Do not seek confidential information of competitors through dishonest methods or other inappropriate methods.
5. Do not do anything which is a violation of intellectual property and copyrighted works of others or competitors.

## Conflict of interest

The Board of Directors has a policy to prevent conflicts between personal interests and the interests of the company as defined in the Code of Conduct for directors and employees as follows:

1. Take care of the company compliance with the rules, procedures and disclosure of connected transactions as strictly required by law or regulatory agency and according to the company's regulations.
2. Avoid making transactions that are related to oneself or related persons / juristic persons which may cause conflicts of interest with the company.

3. In the case of a transaction that is a connected transaction that does not comply with general trading conditions according to the principles approved by the Board of Directors or the nature and size of the transaction it is not within the authority of the management it must be reviewed and commented by the Audit Committee before proposing for approval from the Board of Directors or shareholders
4. In the event that it is necessary to make a connected transaction the transaction must be in accordance with general trading conditions according to the principles approved by the Board of Directors. With transparency and fairness as if doing transactions with third parties and taking into account the maximum benefits of the company
5. Stakeholders must not take part in considering the items that they have a conflict of interest.

## Section 4 Disclosure of Information and Transparency

TTW realizes the importance of disclosing financial, general and significant information in a correct, complete, timely and transparent manner in line with the requirement of the Office of Securities Exchange Commission and SET; in order that all shareholders and stakeholders can be acknowledged inclusively. TTW has distributed such information through the following channels

### Disclosing information on website

To allow shareholders and investors to search for the publicized information rapidly, TTW has presented the regularly updated information on the website [www.ttwplc.com](http://www.ttwplc.com) in Thai and English as below

- Background, vision, mission, and structure of the organization.
- Corporate governance consisting of the principles of good corporate governance, corporate governance committee, subsidiary committees, and executive management.
- Board of Director Sub-Committee Management Charter Responsibility and Term of Office of Board of Director.
- Information for investors consisting of significant financial information, structure of shareholders, and investors' calendar
- Invitation to attend the General Meeting of Shareholders and Extra General Meeting of Shareholders and Form 56-1
- News and movements of the organization consisting of news about the business operation and CSR activities
- Corporate social responsibility consisting of the concept and direction of CSR activities, the news and information on current CSR activities.
- Information for Investor Relation Tel (+662) 019-9484 - 9 Ext. 1108
- Providing information to stock analysts or investors who pay a visit and consult with TTW executive management.
- Travelling to provide an on-site presentation to investors.
- Organizing a stock analysts meeting.
- Providing information via public media such as newspapers, magazines, journals and televisions.

### Financial report preparation

In order to show responsibility for the preparation of financial reports that are accurate, complete, transparent and sufficient to maintain the company's assets. There are used to prevent fraud and abnormal operations including complying with generally accepted accounting standards and use appropriate accounting policies and practice regularly as well as considering the reasonableness and prudence in preparing the financial statements of the company. This will allow stakeholders to have confidence in the financial reports that the company has prepared in accordance with the above objectives The Board of Directors therefore appoints the Audit Committee. To perform the duty of reviewing the company have accurate financial and operational reports

In addition, the Board of Directors has also prepared a report on the responsibility of the Board of Directors in the preparation of financial reports that cover important matters according to the guidelines for directors of listed companies for the Stock Exchange of Thailand. Suggested signed by the Chairman and Managing Director which will be presented in conjunction with the auditor's report in the annual report.

In 2018, the Company allowed the auditor from EY Office Company Limited to be the auditor of the Company, knowledgeable professional expertise is independent and received approval from the SEC by the financial statements of the company it was certified without conditions and correct as it should be in essence according to generally accepted accounting principles and approved by the Audit Committee / the Board of Directors before disclosing to the shareholders.

The company has prepared the management report and analysis (MD&A) which has been prepared quarterly to explain in an analytical way about the financial position including Performance Factors affecting financial status and performance including significant changes. In addition, various important news are disclosed to shareholders via TTW Newsletter.

The company uses Key Performance Indicators (KPIs). The strategic objectives are defined in accordance with the goals of the strategic plan and acceptable risks according to the Balanced Scorecard concept, separated by each view and operational

strategy. And finance such as return on assets market share, customer satisfaction level the success of the personnel development plan, etc.

## Section 5 Responsibilities of Board of Directors

### Structure of Board of Director

The Board of Directors consists of at least 5 directors. To change the number of directors in the Board, an approval is required from shareholders through a majority vote of not less than two-third of shareholders who attend the meeting and are eligible to vote.

As of 31 December 2018, the Board consists of 12 directors. Of these, 11 directors (equal to 92% of the entire Board) are the outsiders who are not the executive management of TTW. Among these outsiders, 4 of them (equal to 33.3% of the entire Board) are independent directors; and there is one female director.

Nomination and Remuneration Committee shall consider and screen all the candidates for being appointed as a director, which covers both the candidates for the directors who are the representative of shareholders and the candidates for independent directors. The committee will consider these candidates based on the appropriateness of skills and experiences that are necessary for enhancing the strength of the Board in overseeing the operation of the company. The committee also reviews the work records of the candidates to see the issues of transparency, moral, responsibility, maturity and professionalism. The structure of Board of Directors is reviewed annually. The Board comments that the structure and elements of current Board comprising 10 male directors and 2 female director that are the experts in the areas of engineering, economics and business administration, accounting and finance, and laws in a proportion of 50%, 33.3%, 8.3% and 8.3% respectively, has constituted a diverse range of professions with useful and necessary experiences and expertise for the operation of TTW business; and that is an appropriate balance of directors.

Table displaying the positions taken in subsidiary committees

Name of directors	Sub-Committees					Remark
	Executive Committee	Audit Committee	Nomination and Remuneration Committee	Corporate Governance Committee	Risk Management Committee	
1. Mr. Phongsarit Tantisuvanitchkul	Chairman	-	-	-	-	Non-executive Director
2. Dr. Sombat Kitjalaksana	Director	-	-	-	-	Non-executive Director
3. Mr. Hideo Matsumoto	Director	-	-	-	Director	Non-executive Director
4. Mr. Suvich Pungchareon	Director	-	-	-	-	Non-executive Director
5. Ms. Walainut Trivisvavet	Director	-	-	Director	Director	Managing Director
6. Mr. Phairuch Mekarporn	-	Chairman	Chairman	Director	-	Independent Director
7. Mr. Somnuk Chaidejsuriya	-	Director	Director	Chairman	-	Independent Director
8. Mrs. Payao Marittanaporn	-	-	Director	-	Director	Non-executive Director
9. Mr. Patarut Dardarananda	-	Director	-	Director	Director	Independent Director
10. Mr. Shunsuke Murai	-	-	Director	-	-	Non-executive Director

## Board of Directors Meeting

The Board has a regular meeting every 3 months and some extraordinary meetings as necessary with a notification of the agenda in advance. The Board also has an agenda on the monitoring of the operation on a regular basis. Corporate Affair Department shall send out the meeting invitation letter at least 10 days in advance and send out meeting documents at least 7 days in advance; so that the Board members can have enough time to review before attending the meeting. In 2018, the meetings of the Board of Directors and those of subsidiary committees were organized 24 times collectively as follows.

Table displaying the numbers of times of directors' attendance in the meetings

Name of Directors	Meeting attendance in 2018 (times)						
	General Share holders Meeting	Board of Directors	Executive Committee	Audit Committee	Nomination and Remuneration Committee	Corporate Governance Committee	Risk Management Committee
1. Dr. Thanong Bidaya	1/1	5/5	-	-	-	-	-
2. Mr. Plew Trivisvavet	1/1	5/5	-	-	-	-	-
3. Mr. Phongsarit Tantisuvanitchkul	1/1	5/5	5/5	-	-	-	-
4. Mr. Techapit Sangsingkeo <sup>(1)</sup>	1/1	3/4	-	4/4	-	2/2	2/3
5. Mr. Phairuch Mekarporn	1/1	5/5	-	4/5	2/2	2/2	-
6. Mr. Somnuk Chaidejsuriya	1/1	5/5	-	5/5	2/2	2/2	-
7. Dr. Sombat Kitjalaksana	1/1	5/5	4/5	-	-	-	-
8. Mr. Suvich Pungchareon	1/1	5/5	5/5	-	-	-	-
9. Mrs. Payao Marittanaporn	1/1	5/5	-	-	2/2	-	4/4
10. Mr. Shunsuke Murai	1/1	4/5	-	-	1/1	-	-
11. Mr. Hideo Matsumoto	1/1	4/5	4/5	-	-	-	4/4
12. Ms. Walainut Trivisvavet <sup>(2)</sup>	1/1	4/4	4/4	-	-	1/1	3/3
13. Mr. Chaiwat Utaiwan <sup>(3)</sup>	-	1/1	1/1	-	-	1/1	1/1
14. Mr. Patarut Dardarananda <sup>(4)</sup>	-	1/1	-	-	-	-	-

**Remark:** <sup>(1)</sup> Mr. Techapit Sangsingkeo has passed away on 15<sup>th</sup> October 2018

<sup>(2)</sup> Ms. Walainut Trivisvavet was appointed to be the Director on 1<sup>st</sup> March 2018

<sup>(3)</sup> Mr. Chaiwat Utaiwan has resignation of the Board of Directors on 28<sup>th</sup> February 2018

<sup>(4)</sup> Mr. Patarut Dardarananda was appointed to be the Director on 12<sup>th</sup> December 2018

In the year 2018, there were 24 Board meetings, with the attendance of the entire Board of Directors meeting at an average of 95 percent and the average attendance of each individual director. 96 of the total number of times. The Company has assigned the Board of Directors to attend the meeting of the Board of Directors in the resolution of not less than two-thirds of the total number of directors. There was a meeting between the directors who were not executives 1 time in the Board of Directors Meeting No. 4/2018 on October 19, 2018 by the Company. Has set the schedule of all board meetings in advance throughout the year and informed the Board of Directors at the 4th quarter of the Board of Directors meeting every year

## Self Assessment of the Board

The company has defined in the corporate governance policy and good corporate governance principles of the company. The Board of Directors must evaluate themselves annually to be used as a framework for monitoring the performance of duties of the Board of Directors and jointly consider the work and problems to improve the performance of the Board of Directors the Board of Directors approved the evaluation form for the Board of Directors reviewed by the Corporate Governance Committee

For the self-assessment process of the Board of Directors, the company will consider the performance evaluation form of the Board of Directors and sub-committees. Before proposing to the Board of Directors for consideration, they will submit the evaluation form to all directors to evaluate their performance and return to the company in order to analyze the evaluation results and propose to the Board of Directors meeting. To acknowledge and find common ways to support the performance of the Board of Directors further.

In 2018, the Board of Directors has approved the evaluation form for the whole board by giving importance to the duties and responsibilities of the Board of Directors in Good Corporate Governance. The assessment form covers the duties of the Board of Directors in all aspects and is consistent with the nature and environment, including having a business ethics of the company. The assessment form is divided into 3 types, consisting of self-evaluation form of the faculty committee, self-evaluation form of each sub-committee, and the self-assessment form of the board and individual sub-committees. The evaluation form of the 3 types has the following evaluation criteria.

- 0 : Strongly disagree or No action was taken on that matter
- 1 : Disagreement or the slight action on that matter.
- 2 : Agreement or Proceeding on that matter.
- 3 : Agreement quite a lot or well done on that matter
- 4 : High Agreement or Execute on that matter excellent

The Board of Directors Meeting No.5/2018 held on Wednesday, December 12, 2018 acknowledged the 2018 Self-Assessment of the board of directors as a whole and 2018 Self-Assessment of committee as a whole as follows:

#### Self-Assessment of the board of directors as a whole

Aspects of Assessment	Full scores	Mean score	
		2018	2017
1. Structure and qualification of the Board	4	3.8	3.9
2. Comprehension of roles and responsibilities of the Board	4	3.3	3.7
3. The Board Meeting	4	3.4	3.8
4. Duties of the Board	4	3.8	3.8
5. Relationship with executive management	4	3.8	4.0
6. Development and training	4	3.8	3.8
<b>Overall self-assessment scores</b>		<b>3.6</b>	<b>3.8</b>

#### Self-Assessment of committee as a whole

Aspects of Assessment	Full scores	Mean score	
		2018	2017
1. Structure and qualification of the Board	4	3.8	4.0
2. The Board Meeting	4	3.8	3.9
3. Audit Committee	4	3.7	3.9
4. Nomination and Remuneration Committee	4	3.6	3.7
5. Corporate Governance Committee	4	3.6	3.7
6. Risk Management Committee	4	3.6	3.7
<b>Overall self-assessment scores</b>		<b>3.7</b>	<b>3.8</b>

#### Self-Assessment of the board of directors and of committee member on an individual basis

Aspects of Assessment	Full scores	Mean score	
		2018	2017
1. Structure and qualification of the Board	4	3.9	3.9
2. The Board Meeting	4	3.8	3.9
3. Audit Committee	4	3.9	3.9
<b>Overall self-assessment scores</b>		<b>3.8</b>	<b>3.9</b>

The average self-assessment of the Board of Directors score is 3.6 from the full score of 4 lower than that of previous year. The average self-assessment score of each particular committee is 3.7 from the full score of 4, lower than that of last year which was 3.8. The average self-assessment score of each committee's member is 3.8 out of 4, which is similar to that of the previous year.

#### Development of directors and executive management

The Company encourages the Board of Directors to study and provide additional training. To increase knowledge and understanding of the roles and duties of the directors to manage the business efficiently and in accordance with the principles of good corporate governance by applying for the membership of the Thai Institute of Directors Association (IOD) for the directors for the benefit of receiving news and knowledge

Director Certification Program (256/2018) of the Thai Institute of Directors Association (IOD) for Mr. Hideo Matsumoto during 11-16 February 2018. At present, there are directors who attend training on roles duties of directors 5 in Director Program Accreditation Program (DAP) and 9 persons, Director Program Certification Program (DCP).

#### Attendance of directors' courses organized by the Thai Institute of Directors Association (IOD)

Program Name of Directors	Finance for Non-Finance Director (FND)	Director Accreditation Program (DAP)	Director Certification Program (DCP)	Role of the Chairman Program (RCP)	Role of the Compensation Committee (RCC)	Advanced Audit Committee Program (AAP)
1. Dr. Thanong Bidaya		DAP 25/2004				
2. Mr. Plew Trivisvavet	FND 13/2004	DAP 18/2004	DCP 50/2004			
3. Mr. Phongsarit tantisuvanitchkul	FND 35/2007		DCP 155/2012			
4. Mr. Phairuch Mekarporn			DCP 81/2006			AACP 17/2007
5. Mr. Somnuk Chaidejsuriya		DAP 9/2004	DCP 46/2004			AACP 9/2005
6. Dr. Sombat Kitjalaksana		DAP 36/2005	DCP 81/2006			
7. Mr. Suvich Pungchareon			DCP 37/2003			
8. Mrs. Payao Marittanaporn			DCP 48/2004		RCC 9/2009	
9. Mr. Shunsuke Murai <sup>(1)</sup>						
10. Mr. Hideo Matsumoto			DCP 256/2018			
11. Ms. Walainut Trivisvavet			DCP 201/2015			AACP 20/2015
12. Mr. Patarut Dardarananda <sup>(2)</sup>						

**Remark:** <sup>(1)</sup> Mr. Shunsuke Murai was appointed to be the Director on 27<sup>th</sup> February 2018

<sup>(2)</sup> Mr. Patarut Dardarananda was appointed to be the Director on 12<sup>th</sup> December 2018



## Orientation for new directors

Board of Directors there is an orientation for every new director to create knowledge and understanding in the business and various operations of the company in order to prepare for the duties of the directors at the same time, there is a policy to enhance knowledge and new perspectives. For all directors in terms of corporate governance and industry conditions, business, technology and new innovations to help support the effective performance of the directors to be able to take office as soon as possible with the company secretary be the coordinator in various matters as follows

1. Business structure Board structure Scope of authority and laws that should be known
2. General knowledge of the business operation guidelines and visit the production process
3. Arrange for a meeting with the Chairman to inquire in-depth information about the business operations of the company

In 2018, there were 3 new directors as follows:

1. Mr. Shunsuke Murai (Appointed on February 27, 2018)
2. Ms. Walainut Trivisvavet (Appointed on March 1, 2018)
3. Mr. Patarut Dardarananda (Appointed on December 12, 2018)

The Board of Directors has provided a corporate governance manual and business ethics. And have announced in general and disclosed on the website which is considered an honest policy used by directors, executives and employees of the company to study, understand and follow regularly

The Board of Directors is responsible for determining the vision and mission of the company. In order for the executives and employees to aim to operate in the same direction in the Board of Directors Meeting No. 4/2018, the Board reviewed the vision, mission, values, organization, strategies and goals, including reviewing important policies that are appropriate and consistent with the business operations in accordance with good corporate governance principles Corporate Governance Policy, Anti-corruption policy, as well as monitoring and monitoring the implementation of the Company's strategies by requiring reporting and operating results of the company especially in terms of financial goals and plans In order to comply with the strategy laid down.

## Nomination of the Members of the Board of Directors

The Nomination and Remuneration Committee will consider from the list proposed by the shareholders as the company gives shareholders the right to nominate directors. And from the Board of Directors of the Thai Institute of Directors Association (IOD). The Nomination and Remuneration Committee is responsible for screening all persons to be appointed as directors. Whether a director is a representative of the shareholder or independent director to propose to the Board of Directors for consideration in the event that the position of director is vacant for other reasons in addition to leaving the position on the agenda and to propose to the shareholders' meeting in the event that the director completes his term of office By considering various factors as follows

- Gender diversity, age, knowledge, ability, experience and expertise in various fields necessary by using the Director Qualifications and Skills Matrix for consideration qualifications in accordance with legal requirements, SET's announcement and SEC and the Company's regulations. The qualifications of the directors must be consistent with the strategic plan. And comply with good corporate governance principles for the benefit of the business development of the company
- Work history that is transparent, unblemished, moral, responsible with maturity and professionalism

Board of Directors consisting of the Chairman of the Board of Directors and members of the Board of Directors, which consist of not less than 5 persons but not more than 12 persons, with the proportion of non-executive directors of the Company not less than half of the total number of directors and having at least 3 independent directors or not less than 1 in 3 of the total number of directors, which the company has determined these representatives from the qualifications of independence according to the Notification of the Securities and Exchange Commission Independent Director of the Company must be qualified according to the definition of the independent director of the company

For the past accounting period Independent directors do not have business relationships or having a business relationship or professional services. The Board of Directors also commented that being an independent director of the independent committee has no impact. To perform duties and provide independent opinions

## How to recruit Directors

1. The Company provides opportunities for minor shareholders to nominate persons to be directors of the Company.
2. Nomination and Remuneration Committee to review the structure of the board to be suitable for the strategic needs of the company.
3. To consider the knowledge, ability and experience of the directors to be in line with the company's goals and strategies. by using the Director Qualification and Skills Matrix tool

4. Nomination and Remuneration Committee conduct recruitment and suggest qualified candidates for the position of director. In place of the retired directors by rotation or additional appointed directors including using the Director Pool of the IOD as a component in recruiting new directors
5. Nomination and Remuneration Committee Consider selecting suitable candidates for directors and proposing to the Board of Directors for approval.
6. The Board of Directors approves the list of directors to be proposed for approval from the Annual General Meeting of Shareholders.

#### Nomination of the Executive Committee

The Executive Committee is comprised of not less than 3 persons but not more than 5 persons. The Board of Directors has appointed the Executive Committee of 5 persons to screen and alleviate the burden of the Board of Directors. In the part that is management work and routine tasks that exceed the authority of the Managing Director in order for the Board of Directors have more time with policy work and administrative supervision

#### Nomination of the independent audit committee

At least 3 members of the Audit Committee must be independent directors. By the Board of Directors has appointed 3 members of the Audit Committee who are qualified according to the Notification of the Securities and Exchange Commission and according to the corporate governance principles of the company At least 1 audit committee member must have accounting knowledge. And / or finance to perform duties to monitor and supervise the operations of the company including supervising financial reports internal control system Auditor selection and considering conflicts of interest.

#### Nomination of the Nomination and Remuneration Committee

The Nomination and Remuneration Committee consists of not less than 3 persons. At least 1 person must be an independent director. Board of Directors has appointed 4 Nomination and Remuneration Committee members with 2 independent directors or 50% of the Nomination and Remuneration Committee

#### Nomination of the Corporate Governance Committee

The Corporate Governance Committee consists of not less than 3 members. The Board of Directors has appointed 4 members of the Corporate Governance Committee, with 3 independent directors, with an independent director acting as the Chairman of the Corporate Governance Committee.

#### Nomination of the Risk Management Committee

The Risk Management Committee consists of not less than 3 persons and at least 1 person must be an independent director. By the Board of Directors has appointed 4 Risk Management Committee members, which are 1 independent director, to monitor risk factors and the various impacts of the company

The Company has established a risk management policy with internal control and risk management systems. That is effective throughout the organization Disclosed on the Company's website

#### Overseeing the Use of Internal Information

TTW has adopted some measures to prevent the use of internal information by employees in all levels; and store the information and documents in a way that they could not be revealed to a third party. For the information available for mutual use among the employees inside the company, only the authorized and responsible persons for performing a related duty shall have an access to. TTW has developed the written Guideline for the Prevention of Internal Information Usage, which has been approved in the meeting of the Board No. 1/2016 organized on 28 July 2016. TTW has distributed this guideline in a circulating letter for the employees and the management to acknowledge inclusively and to comply strictly with it.

## Guideline for the Prevention of Internal Information Usage

### Rationale

TTW is a listed company in the Stock Exchange of Thailand and has run its business in compliance with Public Limited Companies Act B.E.2535 (on the part of share trading), and with the Securities and Exchange Act B.E. 2535 (on the part of securities and exchange), through the performance of duties by directors, executive management, employees of TTW, and the employees of subsidiary companies. There has been a prohibition for such persons from using the essential and unpublicized facts and

information that can significantly impose an effect on the price of shares, which they have learned from performing their duties or from holding a position in the company; otherwise, they would be considered as committing a criminal offence and subject to punishments as provided by laws. There were some amendments made to Securities and Exchange Act B.E. 2535 (5th Version) as announced in Thai Royal Gazette on 11 December 2016. TTW has notified these changes in a circulating letter to directors, executive management, employees of TTW, and employees of subsidiary companies to acknowledge and comply with.

In order to prevent the directors, executive management, employees of TTW and employees of subsidiary companies, as well as TTW Company itself, from facing a charge on violating such laws, and in order to implement good corporate government approach of TTW; the company has defined the guideline for the prevention of internal information usage for all directors, executive management, employees of TTW and employees of subsidiary companies to compile with very strictly. All these persons shall comply with the provisions in Securities and Exchange Act (5th Version) B.E. 2535, coupled with the use of common sense and appropriate reasons for committing an action on a case by case basis. TTW has defined the guideline for the prevention of internal information usage as follows.

## Directors

- (1) Directors shall not use the information acquired from holding the position as a director of the company in a wrongful manner or in a way that would cause damages to the company.
- (2) Directors shall not disclose to any third party the business confidential information or any information that may affect company's business.
- (3) Directors, their spouses and their minors shall not conduct share trading while having access to internal information of the company, which will affect the price of the shares if these information are disclosed to public.
- (4) Directors shall not reveal any unpublicized information to a third party, which may lead to a reservation of purchase or a sale of company's shares.

## Employees

- (1) Employees shall strictly comply with the regulations defined by SET/SEC and applicable laws, which cover the equitable disclosure of information for shareholders and/or public.
- (2) For a disclosure of any information that may affect the business or the share price of the company, an approval must be sought from the Managing Director who may disclose the information himself or assign a responsible person to do so.
- (3) The work units in central administration that take function in providing information to public and investors include Investors Relation and Company Secretary Units (under the Corporate Affairs Division) and so on. The work units that own information have a duty to provide support of such information. The directors, executive management and employees who have access to information about financial statement are prohibited by the company from trading shares within a period of 45 days prior to the disclosure of information and within a period of 24 hours after such disclosure. For any other significant information, executive management and employees who have access to the information are prohibited from trading shares during the period from the date that they have known about the information to 24 hours after the disclosure of such information to SET. In addition, TTW has adopted an internal control system to prevent the leakage of information thoroughly and cautiously. This is to prevent internal information from being revealed to outside prior to a formal disclosure. These measures and control system are considered as a part of significant risk control measures of the company. It is the duty and responsibility of supervisors to oversee the protection of internal information in line with such measures. If an employee uses unpublicized internal information, or the ones that have not been revealed to general shareholders, for personal or other people's benefits from share trading shall be considered as violating the code of conduct defined by the company.

## Securities Trading Based on the Use of Internal Information

### Prohibited Persons

The persons who shall not trade the securities as per the prohibition set in the guideline for the prevention of internal information usage include:

- (1) Executive directors or the persons with an authority to control the operation of the company.
- (2) Worker or employees in the chain companies or the persons holding a position, or working in a line of duty that holds responsibility for, or can have access to, internal information.
- (3) The persons holding a status in favor of acknowledging internal information from performing their duties as an auditor, financial consultant, legal advisor, property price appraisal expert, or any other person doing duties related to internal information.

- (4) Parents, descendants, adoptive parents, or adopted children of the persons mentioned in (1) (2) and (3).
- (5) Siblings from the same mother and father, or the siblings from either a same mother or a same father, of the persons mentioned in (1) (2) and (3).
- (6) The spouses of, or the persons cohabitated with, the persons mentioned in (1) (2) and (3).

## Prohibited Securities

Securities mean the shares, share warrants, convertible debentures, and transferable subscription rights that are issued by the company.

## General Practice Guideline

- (1) Prohibited persons shall not trade the securities at any given moment, as long as they know or should have known the essential and unpublicized information that may affect the price of TTW securities in the Stock Exchange.
- (2) Prohibited persons who have acknowledged such essential information from performing their duties and/or from holding a position in the company and its subsidiaries shall not reveal such information to other persons while it has not been publicized yet; except the revealing through the duties they perform in the company

## Specific Practice Guideline

Apart from the general practice guideline for the prevention of internal information usage, there are some specific practice guidelines that the prohibited persons shall comply with, as detailed below.

- (1) The prohibited persons who have direct involvement in the preparation of TTW financial statements shall not trade TTW securities during the period from the commencement of such preparation to the end of the following day after the date of disclosing such statements.
- (2) Any directors, executive management and employees who have received a draft copy of TTW financial statements shall not trade TTW securities during the period from the day that they received the draft of financial statements to the end of the date of disclosing such statements.
- (3) Prohibited persons who know or should have known that the company will reveal essential information that may affect the prices of TTW securities in the Stock Exchange shall not trade TTW securities starting from the date that they know or should have known about the event to the end of the following day after the date of revealing and distributing such information.
- (4) The company requires to the directors and executive management report of changes in securities holding in TTW Public Company Limited.
- (5) The Company has set a policy for directors and executive management to report to the Board of Directors at least 1 day in advance before trading the company's shares.

## Reporting Procedures of Prohibited Persons

### The Required Duty to Prepare the Report

- (1) Managing Director or a person holding an executive management position in accordance with Securities and Exchange Act shall prepare a report on their initial possession of securities and any changes in the possession of such securities afterward, as required by applicable laws and regulations; and shall submit such report to TTW simultaneously.
- (2) Executive management holding a position as a department head or higher shall prepare a report on the acquisition and the selling of TTW securities in their possession in the case that the volume of such acquisition or sale is equal to or over 5% of the total securities that have been sold.

### Reporting Method

- (1) Managing Director or a person holding an executive management position that have a duty as required by laws shall prepare and submit a report on the possession of TTW securities of their own, and that of their spouses and minor descendants. They are required to submit a copy of such report to the company on the same day that they have sent it to a respective government authority or a regulatory agency.
- (2) Executive management holding a position as a department head or higher shall prepare a report on the possession and the changes in the possession of TTW securities of their own, and that of their spouses and minor descendants; and submit to the company within 7 working days from the date of ownership transfer of such securities

In 2018 the Board of Directors did not receive any complaints regarding rights of shareholder or prevention of use of inside information of Director and management.

## The Remuneration of Auditor

The Board of Directors has appointed an auditor of the company, which was dominated by the Audit Committee based on the consideration about the outcome of previous performance, experience, the preparedness in term of personnel, the acceptable standard of auditing service, and the status of being the auditor certified by the Securities and Exchange Commission (SEC). TTW decided to hire EY Office Co., Ltd. (formerly known as Earnst & Young Ltd.), comprising Ms. Manee Rattanabynnakij, authorized auditor No. 5313, Ms. Sumalee Rivarabandit, authorized auditor No. 3970, and Mrs. Poonnart Paocharoen, authorized auditor No. 5238, as the auditor of TTW.

TTW appointed auditor also served as the auditor of subsidiary companies such as PTW and TWO. However, the auditor did not have any relationship with or hold any benefits from TTW and its subsidiaries, executive management, major shareholders, or any other persons involving with such persons, in a way that would affect their independency in performing their duties. Also, TTW did not receive any other services from the auditor apart from the auditing service. The comparison between the remunerations for the auditor in the past 3 years is displayed as follows.

Description	2018	2017	2016
Auditing the annual financial statements	655,000	625,000	625,000
Reviewing financial statements of the first three quarters	600,000	600,000	600,000
Checking compliance with BOI regulations	75,000	75,000	75,000
Total	1,330,000	1,300,000	1,300,000
Auditing the annual Report (Form 56-2)	70,000	-	-
Grand Total	1,400,000	1,300,000	1,300,000

## Definition of “Related Party Disclosure According to Accounting Standards”

A related party is a person or entity that is related to the entity that is preparing its financial statements.

1. A person or a close member of that person's family is related to a reporting entity if that person:
  - 1.1 had control or joint control over the reporting entity;
  - 1.2 has significant influence over the reporting entity; or
  - 1.3 is a member of the key management personnel of the reporting entity or the parent of the reporting entity.
2. An entity is related to a reporting entity if any of the following conditions applies:
  - 2.1 The entity and reporting entity are members of the same group (which means that each parent, subsidiary and fellow subsidiary is related to the others).
  - 2.2 One entity is an associate or joint venture of the other entity (or an associate or joint venture of a member of a group of which the other entity is a member).
  - 2.3 Both entities are joint ventures of the same third party.
  - 2.4 One entity is a joint venture of a third entity and the other entity is an associate of the third entity.
  - 2.5 The entity is a post-employment defined benefit plan for the benefit of employees of either the reporting entity or an entity related to the reporting entity. If the reporting entity is itself such a plan, the sponsoring employers are also related to the reporting entity.
  - 2.6 The entity has control by a person item 1.
  - 2.7 The person on item 1 (1.1) has significant influence over the entity or members of entity management (or headquarter)
  - 2.8 The entity member or members of the group to service of the key management personnel of the reporting entity or the parent of the reporting entity.

# Compensation Paid to the Board of Directors, Management and Employees

## Compensation of the Board of Directors

Remuneration of the Board of Directors was consider from the duties and responsibilities of the Board of Directors approved by the shareholders. The Nomination and Remuneration Committee shall consider the type of remuneration guidelines and payment methods compensation and other benefits for the Board of Directors, subcommittee and executive managements to be appropriate with the responsibilities consistent with the company's performance including market conditions and propose to the shareholders' meeting to approve the remuneration, both monetary and non-monetary of the Board of Directors by individual basis each year, The Nomination and Remuneration Committee must consider the responsibilities, the intention of the directors, type and size of the business of the company, markets and competitors, the remuneration must be at the appropriate level to the obligations.

## Compensation Criteria

The company has criteria for consideration of remuneration by taking into account the appropriateness of the assigned responsibilities and can be compared to listed companies in the Stock Exchange of Thailand that were in similar industries. The remuneration of directors is sufficient to motivate the directors to have quality and able to perform their duties to achieve the goal according to the business direction of the company. Which defines the composition of compensation in two parts as follows

### Part 1 Annual Fee consist of

- Retainer fee

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

- Attendance Fee

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

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.

In 2018, the company paid the compensations to directors totally 26,196,312 Baht, which comprised 5,427,687 Baht as the regular compensation; 2,348,625 Baht as the meeting allowance and 18,420,000 as the annual bonus for 2018.

### Compensation paid to each director in 2018

Director Name	Positions	Regular Compensation	Meeting Allowance	Total	Bonus (2018)	Total
1. Dr. Thanong Bidaya	Independent Director and Chairman of the Board of Directors	687,400	294,600	982,000	2,292,000	3,274,000
2. Mr. Plew Trivisvavet	Director and Vice Chairman of the Board of Directors	562,800	241,200	804,000	1,873,000	2,677,000
3. Mr. Phongsarit Tantisuvanitchkul	Director and Chairman of Executive Committee	455,700	195,300	651,000	1,518,000	2,169,000
4. Mr. Techapit Sangsingkeo <sup>(1)</sup>	Former Independent Director, Chairman of Audit Committee, Chairman of Risk Management Committee, and Corporate Governance Committee	440,563	201,150	641,713	1,858,000	2,499,713
5. Mr. Phairuch Mekarporn	Independent Director, Chairman of Audit Committee, Chairman of Nomination and Remuneration Committee and Corporate Governance Committee	501,200	214,800	716,000	1,672,000	2,388,000



Director Name	Positions	Regular Compensation	Meeting Allowance	Total	Bonus (2018)	Total
6. Mr. Somnuk Chaidejsuriya	Independent Director, Chairman of Corporate Governance Committee, Nomination and Remuneration Committee and Audit Committee	501,200	214,800	716,000	1,672,000	2,388,000
7. Dr. Sombat Kitjalaksana	Director and Executive Committee	351,400	150,600	502,000	1,171,000	1,673,000
8. Mr. Suvich Pungcharoen	Director and Executive Committee	351,000	150,600	502,000	1,171,000	1,673,000
9. Mrs. Payao Marittanaporn	Director, Risk Management Committee and Nomination and Remuneration Committee	364,400	156,000	520,000	1,215,000	1,735,000
10. Mr. Yasutaka Suzuki <sup>(2)</sup>	Former Director, Nomination and Remuneration Committee	44,417	-	44,417	1,007,000	1,051,417
11. Mr. Shunsuke Murai <sup>(3)</sup>	Director, Nomination and Remuneration Committee	253,931	122,625	376,556	-	376,556
12. Mr. Tomoaki Matsumoto <sup>(4)</sup>	Former Director, Executive Committee and Risk Management Committee	-	-	-	1,252,359	1,252,359
13. Mr. Hideo Matsumoto	Director, Executive Committee and Risk Management Committee	413,700	177,300	591,000	128,641	719,641
14. Mr. Chaiwat Utaiwan <sup>(5)</sup>	Former Director, Executive Committee, Risk Management Committee, Corporate Governance Committee and Managing Director	78,011	51,000	129,011	1,590,000	1,719,011
15. Mr. Patarut Dardarananda <sup>(6)</sup>	Independent Director, Audit Committee Risk Management Committee and Corporate Governance Committee	23,976	25,650	49,626	-	49,626
16. Ms. Walainut Trivisvavet <sup>(7)</sup>	Director, Executive Committee, Risk Management Committee, Corporate Governance Committee and Managing Director	397,989	153,000	550,989	-	550,989
<b>Total</b>		<b>5,427,687</b>	<b>2,348,625</b>	<b>7,776,312</b>	<b>18,420,000</b>	<b>26,196,312</b>

Remarks: <sup>(1)</sup> Mr. Techapit Sangsingkeo has passed away on 15<sup>th</sup> October 2018

<sup>(2)</sup> Mr. Yasutaka Suzuki resigned on 22<sup>nd</sup> February 2018

<sup>(3)</sup> Mr. Shunsuke Murai was appointed to be the Director on 27<sup>th</sup> February 2018

<sup>(4)</sup> Mr. Tomoaki Matsumoto resigned on 28<sup>th</sup> November 2017

<sup>(5)</sup> Mr. Chaiwat Utaiwan was the expiration of employment contract on 28<sup>th</sup> February 2018

<sup>(6)</sup> Mr. Patarut Dardarananda was appointed to be the Director on 12<sup>th</sup> December 2018

<sup>(7)</sup> Ms. Walainut Trivisvavet was appointed to be the Director on 1st March 2018

#### Comparison of Compensations Paid to Directors in 2018, 2017, 2016 and 2015

Description	2018		2017		2016		2015	
	Number of Persons	Amount	Number of Persons	Amount	Number of Persons	Amount	Number of Persons	Amount
Regular Compensation	15	5,427,687	13	6,312,000	15	6,303,000	15	6,262,500
Meeting Allowance	14	2,348,625	12	1,443,400	15	1,488,700	15	1,581,000
Consolidated Bonus	13	18,420,000	13	18,241,167	15	18,420,000	15	19,940,000
<b>Totalt</b>	-	<b>26,196,312</b>	-	<b>25,996,567</b>	-	<b>26,209,700</b>	-	<b>27,783,500</b>

In addition to the above remuneration for directors, Independent directors and non-executive directors also receive remuneration in other benefits such as allowances, accommodation expenses, travel expenses, expenses for attending seminars, training courses of IOD and other institutes according to the regulations of the company

#### Compensation of Management

The payment of compensation for the management shall conform to the policy and criteria defined by directors and based on the performance outcomes of the company as assessed in accordance with the assessment system in which the Board of Directors and the management would work together to define indicators and goals for each year (which could be used for guiding the direction of the operation and as the basis for the assessment of work performance). The details about compensation, bonus and the contribution to provident fund of the management were as follows.

#### Comparison of Compensation, Bonus and Contribution to Provident Fund paid to Executive Management and Year 2018

Description	2018		2017		2016		2015	
	No. of Persons	Amount	No. of Persons	Amount	No. of Persons	Amount	No. of Persons	Amount
Total Compensation	9	18,624,088	8	24,322,552	8	24,699,780	8	20,637,660
Consolidated Bonus	8	5,912,360	8	7,140,015	7	8,848,610	7	7,371,640
Contribution to Provident Fund	9	1,561,753	8	1,563,024	8	1,580,431	8	1,317,874
<b>Total</b>	-	<b>26,098,201</b>	-	<b>33,025,591</b>	-	<b>35,128,821</b>	-	<b>29,327,174</b>

#### Employee compensation and welfare

TTW Public Company Limited have a policy to pay compensation by considering the appropriateness, fairness according to knowledge and ability including each employee's performance and correspond to the average of the same industry. The Compensation for employees must be appropriate for business expansion and growth. Monetary compensation such as salary, other income, provident fund, bonus and professional fees. There was a provident fund for employee by appointed Kasikorn Asset Management Company Limited as the fund manager. In addition, the company provide various benefits to employees as required by law and provide additional benefits

#### Compensation and welfare policy

The Company has a policy to provide fair compensation and welfare comparable to other company in the same business appropriate to knowledge, ability, and responsibility

The company has annual reviews the compensation structure

The company has determined to increase the salary rate for executives and employees once a year using Key Performance Indicator: KPI, which includes current performance (short-term) and long-term strategic performance, such assessment results in the compensation of executives and employees in line with the company's performance. In addition, the company has set a special bonus payment that is linked to the operating results for each year, and linked to the performance of employees to motivate employees to work according to the organization's goals in that year

## Compensation component

- Salary
- Bonus
- Welfares
- Compensation for termination of employment (According to the Labor Protection Act)

**Salary** Determined based on the role and position of each employee which includes professional experience responsibility Job complexity and domestic market conditions

**Bonus** According to performance According to the evaluation of the company's operations, it is an incentive and reward for employees who perform their tasks according to the Company goals, department goals, KPIs

## Welfares

The company provides various welfare benefits to employees as required by law and additional benefits such as Uniforms, Group life insurance and group accident insurance, Annual health checkup, Provident fund, Funeral grants in the case of employees and parents, children or lawful spouses of employees dies, etc.

The company collectively paid compensation to employees of the company and those of subsidiary companies in form of salary, bonus and other benefits as follows.

Unit : Mil.Bt.

Company	2018	2017	2016	2015
TTW	74.46	86.87	81.59	76.82
PTW	10.42	11.50	10.70	10.36
TWO	55.15	58.76	54.37	49.97
Total	140.03	157.13	146.66	137.15

## Personnel

### Human Resources and Administration

Employees will be supervised both in terms of performance evaluation, Personal Development, Career path planning. Welfare and benefits management with transparency and fairness. The Human Resources Department will set the direction, guidelines for employee development in line with the business operations of the organization to be continuously develop employees at all levels and also encourages employees to develop their potential and competency in their career to be in line with business strategies from the company's goals to become an organization in energy business to create differences and add value to the organization by upgrading from the company that operates water business into energy business And the environment according to the company's vision.

### Personnel development

Personnel development is a long-term investment that would deliver results to the organization and employees. The company is committed to developing all employees continuously by promoting and supporting personnel development in various areas as follows

- Knowledge
- Skill
- Ability

By Education, Development and Training, a short-term development that need to adjust the new management approach under strategic management, especially the personnel strategy in the organization to support various situations that may occur both at present and in the future

## Knowledge and Skill Development

1. Activities that provide knowledge, experience and improve attitudes, Training, Job Instruction & Coaching
2. Transferring, Job Rotation under Stud, Acting, Study Tour/ Visit, Job Enrichment and Job Enlargement, Special Assignment
3. Knowledge seeking activities on duty

## Ability development to be in accordance with the strategic management plan through the process as follows

1. Review various events that occurred in the past as a lesson
2. Analyze the organization's environment both inside and outside
3. Create a new vision and be ready to make changes to new working styles.
4. Executives have to change the attitude that people have seen as personnel assets as Human Capitals
5. Adjust the strategy of human resource management in accordance with the organization's strategy
6. Change the new role from the previous order Hold strict regulations to become a change agent. Focus on building flexibility, working systematically.
7. Bring the above 6 approaches to integrate and create new models to occur within the organization. From 7 strategic management tasks

The company has developed the employees by develop their attitude to change mind set and make them feel that they were valuable and important to the organization, making employees have love and commitment to the organization, create motivation by incentives for personnel in terms of salary wages and welfare with a systematic evaluation by using KPI's to evaluate the performance and compare with the previous year to consider salary increases and annual bonuses

Every new employee will receive an orientation to acknowledge the practices, corporate policies, business knowledge, Good corporate governance principles, and development of environmental potential, anti-Corruption. Employees will be continuously developed by training, Job rotation, Self-learning, etc. The company has provided a learning room "Edutainment" hat contains various books, there were courses to changing roles from employees to leadership roles.

In the year 2018, the company provided training for employees to increase knowledge as follows.

## Occupational health safety Trainings

Course Name	Training Date	Participants	No. of Hours
• The duty of the chieftain commander Signal provider	25 May 2018	29	6
• Leadership for QMS and EMS	19-20 June 2018	24	12
• Hazard Identification and Risk Management	21 June 2018	18	6
• Safety in electrical work And helping people who suffer from electrical hazards	23 July 2018	17	6
• Fire drills and fire evacuation drills And training to prevent leakage of chlorine with KIT-B equipment and SCBA ventilation	15, 16, 21 November 2018 11, 17 December 2018	150	4

## Environmental

Course Name	Training Date	Participants	No. of Hours
• Green Building Development in Industrial Estate	4 June 2018	12	4
• Work safety and environmental awareness	21, 25, 27, 28 September 2018 2 October 2018	72	4
• Personnel development to enhance the capability and create a network of people responsible for energy	14 September 2018 16 November 2018	14	6

## Anti-corruption

Course Name	Training Date	Participants	No. of Hours
• Corruption examination	24-26 September 2018	1	18
• Enhancing Good Corporate Governance based on CGR Scorecard	26 September 2018	2	7

## Employees training in the last 5 years

Year	No. of Program	No. of Hours
2014	411	10,781
2015	259	11,388
2016	220	8,396
2017	127	6,554
2018	98	4,587

The number of Executive management and employees of the company and its subsidiaries as of December 31, 2018 as follows

TTW Public Company Limited (TTW)	139	persons
Pathum Thani Water Company Limited (PTW)	29	persons
Thai Water Operation Company Limited (TWO)	153	persons
<b>Total</b>	<b>321</b>	<b>persons</b>

## Number of Executive management and employees of the company and its subsidiaries

Main Group	TTW	PTW	TWO	Total
Managing Director	3	-	-	3
Internal Audit Division	3	-	-	3
Corporate Affairs Division	6	-	-	6
<b>Administration Group</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
Human Resource and Administrative Division	25	2	-	27
Account and Finance Division	13	-	-	13
<b>Business Development Group</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
Customer Relationship Management Division	15	-	-	15
Business Development Division	5	-	-	5
<b>Operation Group</b>	<b>-</b>	<b>-</b>	<b>1</b>	<b>1</b>
Operation Division	66	27	113	206
Engineering Division	3	-	39	42
<b>Total</b>	<b>139</b>	<b>29</b>	<b>153</b>	<b>321</b>

## Report of the Board of Director Responsibility towards Financial

The Board of Directors is responsible for the financial statement of TTW Public Company Limited (TTW) and subsidiaries to ensure that the financial statements, incomes, expenses and cash flow statement are accurate, reasonable and in line with the generally accepted accounting standard and policy as well as consistent practice and careful assumption.

The Board of Directors had delegated this responsibility to the Audit Committee which comprises qualified and experienced independent director with qualifications that fully meet the requirement of the Securities and Exchange Commission and related rules and regulations. The Audit Committee oversaw the internal control process to ensure its effectiveness and efficiency. They had also reviewed the financial statement for its accuracy, reliability and adequately disclosed of related information. The Audit Committee had presented the performance report to the company's Board of Directors.

The Board of Directors believes that the 2018 financial statement of TTW Public Company Limited (TTW) and its subsidiaries showed financial standing, incomes, expenses and total cash flow that are accurate and reasonable. According to accounting information is accurate and complete, the choice of accounting policy is appropriate and consistent compliance is in accordance with the generally accepted accounting standard. The disclosure of information in the note to financial statement is adequate and the company's auditor has provided opinions on the financial statement of TTW Public Company Limited (TTW) and its subsidiaries without condition in the auditor's report.



(Dr. Thanong Bidaya)  
Chairman of the Board of Directors



(Ms. Walainut Trivisvavet)  
Managing Director



# Auditing Committee Report

Audit Committee of TTW Public Company Limited was appointed by Board of Directors. This committee comprises 3 independent directors who were the experts and have experiences in various areas, such as, Mr. Phairuch Mekarporn as the Chairman Mr. Somnuk Chaidejsuriya and Mr. Patarut Dardarananda as the members. The Manager of Internal Audit Division has been assigned to take function as the secretary of this committee.

Audit Committee has performed duties independently within the scope of duties and responsibilities to accomplish the missions as assigned by Board of Directors, which is consistent with to the regulations set by Stock Exchange of Thailand, which also include the provision of suggestions on any related issues. The Audit Committee held 4 meetings in 2018 attended by the executive management, internal auditors, and TTW auditor; the contents of which are summarized below.

## 1. Verification of Financial Reports

This is to ensure that the accounting system and financial reports were correct and creditable, the disclosure of information in financial statements was sufficient, the engagement in related party transactions with subsidiary companies and affiliated companies was reported; and that the company had operated its business in accordance with regular business conditions and the criteria set by the Stock Exchange of Thailand for the benefits of investors. The Audit Committee shared a same comment with the auditor that quarterly financial statements and annual financial states of the year 2018 were accurate on the part of significant contents in accordance with generally acceptable accounting principles (GAAP).

## 2. Verification of Internal Audit

The Audit Committee reviewed and endorsed the scope of internal audit plan for 2018 and reviewed the report of internal audit results by asking the Internal Audit Division to submit the reports directly to Audit Committee on a quarterly basis, and found that the internal control systems of the operational process and that of significant functions were appropriate for the current operation. The Committee also provided additional suggestions that might be useful for the operation; monitored and regulated the management and administrative divisions to adapt and improve as recommended by internal auditors. With regard to the compliance with Securities and Exchange Act, the regulations of Stock Exchange of Thailand, and/or any applicable laws, the Committee did not find any significant deficiencies

The Committee carried this out against the scope of duties, responsibilities and independency of Internal Audit Division and came to conclusion that TTW had adopted sufficient, appropriate and efficient internal control systems in line with international standards.

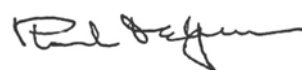
## 3. Considering Related transactions

- 1) The Audit Committee has considered related transactions in acquiring the Company's assets in the payment of flood protection dams in Bang Pa-in Industrial Estate For Bang Pa-In Land Company Limited, approved by the Board of Directors meeting No. 2/2018 This is to prevent the damage of property that will occur to the company The rate charged is average and fair and appropriate.
- 2) The Audit Committee has considered related transactions in acquiring the Company's assets in purchasing electricity from Bangkhengchai Company Limited, approved by the Board of Directors meeting No. 2/2018 which is paid by the actual usage amount in the electricity tariff, according to the announcement of the Provincial Electricity Authority (PEA.) With a discount of 10 percent for a period of 25 years, which is beneficial to the company to save electricity costs from discounts received

## 4. Considering the Selection Lay off and Appointment of Auditor, Proposing Audit Fee

The Audit Committee considered the selection Lay off and appointment of auditor and proposed audit fee for presenting to the Board of Directors based on creditability, competency in providing service and recommendation in accordance with accounting standards, and ability in endorsing financial statements in time.

In 2018, the Audit Committee considered to appoint Miss Manee Rattanabunnakij, authorized auditor No. 5313 and/or Miss Sumalee Rivarabandit, authorized auditor No. 3970 and/or Mrs. Poonnart Paocharoen, authorized auditor No. 5238 of EY Office Co., Ltd., as the auditor of the company for the year 2018. This auditor had creditable qualifications and could perform duties in accordance with the standards of accounting and auditing profession. The audit fee was proposed as not exceeding 1,400,000 Baht. Board of Directors has considered and approved this for presenting further in shareholders meeting for approval.



(Mr. Phairuch Mekarporn)  
Chairman of the Audit Committee

# Independent Auditor's Report

## Independent Auditor's Report

To the Shareholders of TTW Public Company Limited

### Opinion

I have audited the accompanying consolidated financial statements of TTW Public Company Limited and its subsidiaries (the Group), which comprise the consolidated statement of financial position as at 31 December 2018, and the related consolidated statements of comprehensive income, changes in shareholders' equity and cash flows for the year then ended, and notes to the consolidated financial statements, including a summary of significant accounting policies, and have also audited the separate financial statements of TTW Public Company Limited for the same period.

In my opinion, the financial statements referred to above present fairly, in all material respects, the financial position of TTW Public Company Limited and its subsidiaries and of TTW Public Company Limited as at 31 December 2018, their financial performance and cash flows for the year then ended in accordance with Thai Financial Reporting Standards.

### Basis for Opinion

I conducted my audit in accordance with Thai Standards on Auditing. My responsibilities under those standards are further described in the *Auditor's Responsibilities for the Audit of the Financial Statements* section of my report. I am independent of the Group in accordance with the Code of Ethics for Professional Accountants as issued by the Federation of Accounting Professions as relevant to my audit of the financial statements, and I have fulfilled my other ethical responsibilities in accordance with the Code. I believe that the audit evidence I have obtained is sufficient and appropriate to provide a basis for my opinion.

### Key Audit Matter

Key audit matter is the matter that, in my professional judgement, was of most significance in my audit of the financial statements of the current period. This matter was addressed in the context of my audit of the financial statements as a whole, and in forming my opinion thereon, and I do not provide a separate opinion on this matter.

I have fulfilled the responsibilities described in the *Auditor's Responsibilities for the Audit of the Financial Statements* section of my report, including in relation to this matter. Accordingly, my audit included the performance of procedures designed to respond to my assessment of the risks of material misstatement of the financial statements. The results of my audit procedures, including the procedures performed to address the matter below, provide the basis for my audit opinion on the accompanying financial statements as a whole.

Key audit matter and how audit procedures respond for each matter is described below.

#### *Assets for production of treated water and rights to produce and sell treated water and treat waste water*

The Group recognised the amortisation expenses of the assets for the production of treated water of the Company, the assets that must be transferred at the end of concession of the subsidiary, the rights to produce, sell treated water and treat waste water of the Group in the financial statements amounting to Baht 846 million (Separate financial statements: Baht 513 million), of which the expenses during this year accounted for 38% of total expenses in the consolidated financial statements (34% of total expenses in the separate financial statements). In calculating the amortisation expenses, the Group used the units of production method which required an estimate of the number of units of treated water to be produced in the future, until the end of the concession period or the end of the operation contract. The management must use judgement to estimate the amount of future production, based on present production volumes, production capacity, demand from customers, economic and industry conditions. This affect the amount of the amortisation expenses.

I assessed the assumptions applied by management in estimating the number of units to be produced in the future by inquiring with the responsible management and gaining an understanding of the method applied to estimate units of production. I also checked the duration of the concession and the duration of the rights to produce and sell treated water and treat waste water to the relevant documents. In addition, I compared the number of units of production estimated by the Group with actual past and current production volumes and tested the Group's calculation of amortisation expenses for the year.

#### **Other Information**

Management is responsible for the other information. The other information comprise the information included in annual report of the Group, but does not include the financial statements and my auditor's report thereon.

My opinion on the financial statements does not cover the other information and I do not express any form of assurance conclusion thereon.

In connection with my audit of the financial statements, my responsibility is to read the other information and, in doing so, consider whether the other information is materially inconsistent with the financial statements or my knowledge obtained in the audit or otherwise appears to be materially misstated. If, based on the work I have performed, I conclude that there is a material misstatement of this other information, I am required to report that fact. I have nothing to report in this regard.

#### **Responsibilities of Management and Those Charged with Governance for the Financial Statements**

Management is responsible for the preparation and fair presentation of the financial statements in accordance with Thai Financial Reporting Standards, and for such internal control as management determines is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, management is responsible for assessing the Group's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless management either intends to liquidate the Group or to cease operations, or has no realistic alternative but to do so.

Those charged with governance are responsible for overseeing the Group's financial reporting process.

#### **Auditor's Responsibilities for the Audit of the Financial Statements**

My objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes my opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with Thai Standards on Auditing will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements.

As part of an audit in accordance with Thai Standards on Auditing, I exercise professional judgement and maintain professional skepticism throughout the audit. I also:

- Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for my opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Group's internal control.

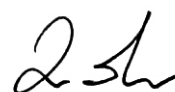
- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.
- Conclude on the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Group's ability to continue as a going concern. If I conclude that a material uncertainty exists, I am required to draw attention in my auditor's report to the related disclosures in the financial statements or, if such disclosures are inadequate, to modify my opinion. My conclusions are based on the audit evidence obtained up to the date of my auditor's report. However, future events or conditions may cause the Group to cease to continue as a going concern.
- Evaluate the overall presentation, structure and content of the financial statements, including the disclosures, and whether the financial statements represent the underlying transactions and events in a manner that achieves fair presentation.
- Obtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the Group to express an opinion on the consolidated financial statements. I am responsible for the direction, supervision and performance of the group audit. I remain solely responsible for my audit opinion.

I communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that I identify during my audit.

I also provide those charged with governance with a statement that I have complied with relevant ethical requirements regarding independence, and to communicate with them all relationships and other matters that may reasonably be thought to bear on my independence, and where applicable, related safeguards.

From the matters communicated with those charged with governance, I determine the matter that was of most significance in the audit of the financial statements of the current period and is therefore the key audit matter. I describe this matter in my auditor's report unless law or regulation precludes public disclosure about the matter or when, in extremely rare circumstances, I determine that a matter should not be communicated in my report because the adverse consequences of doing so would reasonably be expected to outweigh the public interest benefits of such communication.

I am responsible for the audit resulting in this independent auditor's report.



Manee Rattanabunnakit  
Certified Public Accountant (Thailand) No. 5313

EY Office Limited  
Bangkok: 26 February 2019

# // Operation Result Analysis and Report

## Income Analysis

### Income from Tap Water Sales

Most of the tap water income is from the sales of water to the Provincial Waterworks Authority (PWA) by the Company and Pathum Thani Water Co., Ltd. (PTW) according to the contract. The Company also sells tap water to the business operators in Bang Pa-In Industrial Estate under the Water Purchase Sales Agreement. In 2016 and 2017 and 2018, TTW and its subsidiaries earned income from selling tap water supply for 5,270.2 Million Baht, 5,474.5 and 5,807.4 Million Baht respectively or the increase of 3.9 % and 6.1%, respectively from the same period of the previous year. The increased income from selling tap water supply in 2017 and 2018 can be described as follows:

In 2017, the income from tap water sales increased by 204.3 Million Baht or 3.9% due to the following reasons.

- 1) The income from selling tap water supply of TTW increased for 147.8 Million Baht or 4.1% as the total amount of tap water sale increased by 7.5 Million cubic meter and the selling price had been increased from the previous year. The total revenue from sale of tap water increased by 121.7 Million Baht and total amount of tap water sale in Bang Pa-In Industrial Estate increased by 0.6 Million cubic meter as well as the increase of tap water charge. The total amount of tap water sale in Bang Pa-In Industrial Estate increased by 26.1 Million Baht or 14.5%.
- 2) The income from selling tap water supply of Pathum Thani Water Co., Ltd. increased for 56.5 Million Baht or 3.4 % as the selling price of PTW had been increased by 4.4 Million cubic meter or 3.3%.

In 2018, the income from tap water sales increased by 332.9 Million Baht or 6.1% due to the following reasons.

- 1) The income from selling tap water supply of TTW increased for 203.0 Million Baht or 5.4% as the total amount of tap water sale increased by 12.4 Million cubic meter and the selling price had been increased from the previous year. The total revenue from sale of tap water increased by 197.8 Million Baht and total amount of tap water sale in Bang Pa-In Industrial Estate increased by 0.1 Million cubic meter as well as the increase of tap water charge. The total amount of tap water sale in Bang Pa-In Industrial Estate increased by 5.2 Million Baht or 2.5%.
- 2) The income from selling tap water supply of Pathum Thani Water Co., Ltd. increased for 129.9 Million Baht or 7.6 % as the selling price of PTW had been increased by 10.1 Million cubic meter or 7.4%.

### Incomes from Services

Incomes from services comprise those from the production of tap water, waste water treatment service and maintenance of tap water distribution pipe system at Amata Industrial Estate and waste water treatment service at Bang Pa-In Industrial Estate. In 2016 and 2017 and 2018, the total incomes of the Company and its subsidiary from services was 108.7 Million Baht, 120.7 Million Baht and 118.3 Million Baht respectively or the increase of 11.0 % in 2017, a decrease of 2.0% in 2018, the incomes that increased and decreased were due to the following reasons.

In 2017, TTW and its subsidiaries earned income from services for 12.0 Million Baht which was an increase 11.0 % due to an increase in administrative cost of subsidiary company and an increase in waste water treatment service charge in Bang Pa-In Industrial Estate.

In 2018, the income from services decreased by 2.4 Million Baht or 2.0 % due to a decrease in administrative expenses of subsidiary company

### Other Incomes

The income of TTW and its subsidiaries consists of interest income from the bank deposit and remuneration from cash flow management of TTW, income from selling assets and other incomes.

In 2016 and 2017 and 2018, TTW and its subsidiaries earned income for 120.1 Million Baht, 152.2 Million Baht and 22.8 Million Baht respectively which was an increase of 26.7% in 2016 and a decrease of 85.0% in 2018. The incomes that increased in 2017 and decreased in 2018 were due to the following reasons.

In 2017, other incomes increased by 32.1 Million Baht or 26.7% due to an increase in administrative expenses.

In 2018, other incomes decreased by 129.4 Million Baht or 85.0 % because the Company made a loan prepayment in December 2017. As a result, the amount of cash in hand decreased and the return from management also decreased.

## Expense Analysis

(Unit : Million Baht)

Description	2018	2017	2016
Cost of tap water sales and service	1,722.2	1,564.4	1,497.5
Administrative expenses	280.3	257.3	244.3
Financial cost	371.7	407.0	433.2
Income tax	616.1	632.2	606.7
<b>Total</b>	<b>2,990.3</b>	<b>2,860.9</b>	<b>2,781.7</b>

### Cost of sales and services

Cost of sales and services of water supply of TTW and its subsidiaries consists of depreciation of assets for water production, electricity expenses, chemical expenses, land rent for pipe orientation, production and maintenance personnel-related expenses, repair costs and other production costs.

In 2016, 2017 and 2018, TTW and its subsidiaries had cost of sales and services of 1,497.5 Million Baht, 1,564.4 Million Baht and 1,722.2 Million Baht respectively or about 27.2 %, 27.2 % and 28.9% of total sales, respectively. The increase in 2017 and 2018, compared with the same period of the previous year were 4.5% and 10.1% respectively which could be explained as follows.

In 2017, the cost of sales and services increased by 66.9 Million Baht due to an increase in tap water production assets that resulted in an increase of depreciation.

In 2018, the cost of sales and services increased by 157.8 Million Baht due to an increase in tap water sales of 22.50 Million cubic meter. As a result the depreciation cost increased by 82.2 Million Baht, electricity cost by 38.1 Million Baht, costs of maintenance and parts by 23.1 Million Baht, production cost by 11.4 Million Baht and chemicals cost by 3.0 Million Baht in relation to the increase in sales volume.

### Administrative Expenses

Administrative expenses of TTW and its subsidiaries for 2016, 2017 and 2018 were 244.3 Million Baht, 257.3 Million Baht and 280.3 Million Baht respectively. The increase in 2017 and 2018 were 5.3% and 8.9%, compared with the same period of the previous year due to the following reasons.

In 2017, administrative expenses increased by 13.0 Million Baht, compared with the same period of the previous year due to expenses related to customer support, public relations and other activities.



In 2018, administrative expenses increased by 23.0 Million Baht, compared with the same period of the previous year due to the written - off expenses incurred from the tap water development project in Myanmar.

### Share of profit from investment in associate

The Share of profit from investment in associate in 2016, 2017 and 2018 were 13.9 Million Baht, 40.2 Million Baht and 151.6 Million Baht, respectively. The increase in 2017 and 2018 were 189.2% and 277.1%, respectively when compared with the same period of the previous year due to the following reasons.

In 2017, Share of profit from investment in associate increased by 26.3 Million Baht, or 189.2% due to an increase in total sales of electricity by the subsidiary, compared with the same period of the previous year.

In 2018, Share of profit from investment in associate increased by 111.4 Million Baht, or 277.1% due to an increase in total sales of electricity by the subsidiary, compared with the same period of the previous year.

### Financial Cost

The financial cost in 2016, 2017 and 2018 were 433.2 Million Baht, 407.0 Million Baht and 371.7 Million Baht, respectively which were decreased, compared with the same period of the previous year due to the following reasons.

In 2017, financial cost of the Company decreased 26.2 Million Baht or 6.0% due the payment of loan and a decrease in loan interest rate, compared with the same period of the previous year.

In 2018, financial cost of the Company decreased 35.3 Million Baht or 8.7% due the payment of loan before maturity in December 2017.

### Corporate Income Tax

The corporate income tax in 2016, 2017 and 2018 were 606.7 Million Baht, 632.2 Million Baht and 616.1 Million Baht respectively. An increase of corporate income tax in 2017 and the decrease in 2018 can be explained as follows.

In 2017, the corporate income tax decreased by 25.5 Million Baht or 4.2% due to an increase in operational profit, compared with the same period of the previous year.

In 2018, the corporate income tax decreased by 16.1 Million Baht or 2.5% due to the deferred tax liabilities.

### Net Profit

In 2016, 2017 and 2018, TTW and its subsidiaries had net profit of 2,492.5 Million Baht, 2,680.8 Million Baht and 2,860.9 Million Baht respectively calculated or 45.33 %, 46.64% and 48.00% of the total income of TTW and its subsidiaries, respectively. The increase in net profit in 2018, compared with the previous year was explained above.

## Financial Positions Analysis

(Unit : Million Baht)

Incomes	December 31, 2018	December 31, 2017	December 31, 2016
Total asset	23,330.4	23,277.0	25,764.8
Total liabilities	10,965.5	11,399.1	14,229.4
Shareholders' Equity	12,364.9	11,877.9	11,535.4

## Assets Analysis

The assets of TTW and its subsidiaries consist, mostly, of non-current assets which were about 79-86% of total asset. As of 31 December 2018, TTW and its subsidiaries had total assets of 23,330.4 Million Baht which is an increase of 53.4 Million Baht when compared with that in 31 December 2017. The increase in asset incurred, mainly, from temporary investment and an increase and a decrease in other assets which can be explained as follows.

### **Cash and Cash Equivalent:**

As of December 31, 2018, the amount of cash and cash equivalent of TTW and its subsidiaries was 99.3 Million Baht, a decrease of 217.5 Million Baht, compared with December 31, 2017.

### **Temporary Investment**

As of December 31, 2018, the amount of temporary investment of TTW and its subsidiaries was 3,499.9 Million Baht, an increase of 1,140.4 Million Baht, compared with December 31, 2017 because the Company deposited in fixed bank account, invested in debt instrument and securities.

### **Trade and Other Receivables**

As of December 31, 2018, the amount of trade and other receivables of TTW and its subsidiaries was 564.5 Million Baht, an increase of 11.2 Million Baht, compared with December 31, 2017 because of an increase in sales, compared with the same period of the previous year. The main trade receivable of 508.4 Million Baht was the Provincial Waterworks Authority (PWA) whose period of grace period is 30 days after the date of invoice's issuance.

### **Raw Material and Inventory Supply**

As of December 31, 2018, the Company and its subsidiary has raw material and supplies worth 28.0 Million Baht the amounts raw Material and Inventory Supply of TTW and its subsidiaries which were mostly chemicals for production of tap water, amounting 7.6 Million Baht and maintenance parts for production and distribution of tap water, amounting 20.4 Million Baht. The average circulation rate of major chemicals was not longer than 3 months and the parts were kept in stock to be used for the projected maintenance works.

### **Investment in Associate**

As of December 31, 2018, the amount of investment in associate of TTW and its subsidiaries was 4,656.5 Million Baht, an increase of 148.0 Million Baht, compared with December 31, 2017

### **Other long-term investment**

As of December 31, 2018, the amount of other long-term investment of TTW and its subsidiaries was 28.7 Million Baht, an decrease of 0.3 Million Baht, compared with December 31, 2017.

### **Property Land, Plant and Equipment**

As of December 31, 2018, the value of land, plant and equipment of TTW and its subsidiaries was 788.5 Million Baht, an increase of 12.6 Million Baht, compared with December 31, 2017 because additional building improvement material, decorative fixtures, office equipment and tools.

### **Assets that are owned by the company - asset that must be transferred at end of concession of subsidiary.**

As of December 31, 2018, the value of assets for production of treated water under agreements with public sector agency - assets that must be transferred at end of concession of subsidiary of TTW and its subsidiaries was 11,494.6 Million Baht, a decrease of 768.7 Million Baht, compared with December 31, 2017 because of the recording of depreciation during the period.

### **Rights to produce and sell treated water and treat waste water from private sector agency**

As of December 31, 2018, the value of rights to produce and sell treated water and treat waste water from private sector agency of TTW and its subsidiaries was 1,188.1 Million Baht, a decrease of 49.9 Million Baht, compared with December 31, 2017.

#### Rights to produce and sell treated water from business acquisition

As of December 31, 2018, the value of rights to produce and sell treated water from business acquisition of TTW and its subsidiaries was 933.1 Million Baht, a decrease of 195.5 Million Baht because of the recording of distribution cost during the period.

## Liability Analysis

The liabilities of TTW and its subsidiaries consist of bank loans and the issuance of debenture which are about 44-52% of total assets. As of 31 December 2018, TTW and its subsidiaries had total liabilities of 10,965.5 Million Baht, 10,190.8 Million Baht of which were loans and debentures. The loans, amounting 3,795 Million Baht has fixed and variable interest and the principals are repaid quarterly. The debenture, amounting 6,400 Million Baht, carries fixed interest rate.

As of 31 December 2018, TTW and subsidiary has a total liability of 10,965.5 Million Baht, a decrease of 433.6 Million Baht, compared with the same period of the previous year because the company has paid the long-term loan.

## Equity Analysis

As of 31 December 2018, TTW and its subsidiaries had equity of 12,364.9 Million Baht which was an increase of 487.0 Million Baht when compared with 31 December 2017 as in 2018 TTW had an annual net profit of 2,841.9 Million Baht and paid an amount of 2,394.0 Million Baht dividend.

## Cash Flow Analysis

(Unit : Million Baht)

Statement of Cash Flow	2018	2017	2016
Net cash flow from operating activities	3,844.1	3,417.2	3,272.1
Net cash flow used in investing activities	(1,168.3)	1,734.4	(331.6)
Net cash flow used in financial activities	(2,893.3)	(5,081.1)	(3,478.9)
Net cash and cash equivalent increase (decrease)	(217.5)	70.5	(538.4)

#### Cash Flows from Operating Activities

In 2017, TTW and its subsidiaries had net cash flow from operations at an amount of 3,417.2 Million Baht, an increase from the same period of the previous year of 145.1 Million Baht or 4.4% as in 2017 TTW paid the amount of corporate tax paid by the Company decreased by 55.2 Million Baht and the trade payables and other account payables decreased by 75.0 Million Baht while sharing of profit from investment rose by 26.3 Million Baht.

In 2018, TTW and its subsidiaries had net cash flow from operations at an amount of 3,844.1 Million Baht which was an increase from the same period of the previous year of 426.9 Million Baht or 12.5% as in 2018, trade account payables and other account payables increased by 208.8 Million Baht while the sharing of profit from investment in subsidiaries increased by 111.4 Million Baht while the interest payment decreased by 33.4 Million Baht.

#### Cash Flow from Investing Activities

In 2017, TTW and its subsidiaries had cash flow from investment for 1,734.4 Million Baht which is a decrease from the same period of the previous year for 2,066.0 Million Baht or 623.0% as in 2017, total temporary investment of TTW and its subsidiaries decreased by 646.9 Million Baht, land, the value of plant and equipment decreased by 198.2 Million Baht, the assets in water supply production under the contract decreased by 1,045.6 Million Baht and water supply production assets that need to be transferred at the end of contract of the subsidiaries decreased by 83.6 Million Baht.

In 2018, TTW and its subsidiaries had cash flow from investment for 1,168.3 Million Baht which was an increase from the same period of the previous year for 2,902.7 Million Baht or 167.4% as in 2018, the total temporary investment of TTW and its subsidiaries increased by 3,272.3 Million Baht, while the assets in water supply production under the contract decreased by 383.9 Million Baht and dividend receivable decreased by 69.9 Million Baht.

#### **Cash flow from financing activities**

In 2017, TTW and its subsidiaries had cash flow from fund generating activities at an amount of 5,081.1 Million Baht which is an increase from the year 2016 as in 2017, TTW used an amount of 1,580 Million Baht deposit to payback the long-term loan before maturity.

In 2018, the Company and subsidiary has an amount of 2,893.3 Million Baht cash flow to be used in capital generating activities which was a decrease from the same period of the previous year because in 2017, the Company used an amount of 1,580 Million Baht deposit to payback the long-term loan before maturity.

## **Key Financial Ratios**

#### **Liquidity Ratio**

Liquidity ratio in 2016, 2017 and 2018 were 2.85%, 1.60% and 1.66%, respectively. The liquidity ratio of the Company and its subsidiary was at a good position and most of the current assets of the company and its subsidiary was in the form of cash and cash equivalent, temporary investment and trade receivable and other account receivables.

#### **Profitability Ratio**

Profitability ratio of the Company and its subsidiary in 2016, 2017 and 2018 were 72.2%, 72.0% and 71.0%, respectively. The preliminary profit in 2018 decreased a little, compared with the same period of the previous year.

Net profit ratio of the Company and its subsidiary in 2016, 2017 and 2018 were 45.3%, 46.6% and 48.1%, respectively. The net profit ratio in 2018 increased due to an increase in sales and a drop in financial cost.

#### **Efficiency Ratio**

The ratio of Return of Assets (ROA) of the Company and its subsidiary in 2016, 2017 and 2018 were 9.7%, 11.5% and 12.3%, respectively and the ratio of return of fixed assets of the Company and its subsidiary in 2016, 2017 and 2018 were 15.7%, 17.4% and 19.9%, respectively. The ratio of return of assets and the ratio of return of fixed assets increased as the net profit of the Company and its subsidiary in 2018 increased, compared with the same period of the previous year.

#### **Financial Policy Analysis Ratio**

As of December 31, 2016, 2017 and 2018, the Company and its subsidiary have the debt to equity ratio of 1.2%, 1.0% and 0.9%, respectively. The D/E ratio as of the end of 2018 decreased in comparison with the end of 2017 because the Company has paid back loans according to contract.

Dividend payout ratios in 2016, 2017 and 2018, were 96.0%, 89.3% and 83.5%, respectively.

## **Commitments and Contingent Liabilities**

The Company has Commitments as detailed in Note to Financial Statement 33.1: Capital commitments, 33.2: Services and other commitments, 33.3: Operating lease commitment. The Company has prepared to generate capital by borrowing and/or issuance of debenture and/or Company's operational cash.

# Statement of financial position

TTW Public Company Limited and its subsidiaries

As at 31 December 2018

(Unit: Baht)

		<b>Consolidated financial statements</b>		<b>Separate financial statements</b>	
	<b>Note</b>	<b>2018</b>	<b>2017</b>	<b>2018</b>	<b>2017</b>
<b>Assets</b>					
<b>Current assets</b>					
Cash and cash equivalents	7	99,342,067	316,808,375	92,437,221	280,915,300
Current investments	8	3,499,881,399	2,359,470,155	2,826,763,704	1,744,711,852
Trade and other receivables	6, 9	564,547,712	553,314,173	394,436,339	380,288,058
Current portion of long-term loans to related party and interest receivable	6	-	-	289,856,969	367,433,193
Raw materials and supplies	10	28,007,231	23,054,712	16,761,155	12,696,313
Other current assets		24,546,799	26,903,290	20,517,180	22,500,456
<b>Total current assets</b>		<b>4,216,325,208</b>	<b>3,279,550,705</b>	<b>3,640,772,568</b>	<b>2,808,545,172</b>
<b>Non-current assets</b>					
Long-term loans to related party, net of current portion	6	-	-	171,440,000	461,080,000
Investments in subsidiaries	11	-	-	2,137,180,866	2,358,675,014
Investment in associate	12	4,656,517,530	4,508,502,298	4,228,013,282	4,228,013,282
Other long-term investments	13	28,725,000	29,000,000	-	-
Property, plant and equipment	14	788,502,280	775,909,824	725,203,269	714,865,259
Assets for production of treated water with public sector agency:					
Assets that are owned by the Company	15	9,560,793,199	9,993,245,750	9,560,793,199	9,993,245,750
Assets that must be transferred at end of concession of subsidiary	16	1,933,837,449	2,270,108,038	-	-
Rights to produce and sell treated water and treat waste water from private sector agency	17	1,188,114,421	1,238,007,688	1,188,114,421	1,238,007,688
Rights to produce and sell treated water from business acquisition	18	933,119,920	1,128,552,669	-	-
Intangible assets	19	2,884,132	4,044,641	-	-
Deferred tax assets	27	5,312,714	3,615,468	-	-
Advance payment to subcontractor - related party		1,325,300	-	1,325,300	-
Other non-current assets		14,917,078	46,504,062	11,605,799	43,042,488
<b>Total non-current assets</b>		<b>19,114,049,023</b>	<b>19,997,490,438</b>	<b>18,023,676,136</b>	<b>19,036,929,481</b>
<b>Total assets</b>		<b>23,330,374,231</b>	<b>23,277,041,143</b>	<b>21,664,448,704</b>	<b>21,845,474,653</b>

The accompanying notes are an integral part of the financial statements.

# Statement of financial position (continued)

TTW Public Company Limited and its subsidiaries

As at 31 December 2018

(Unit: Baht)

		Consolidated financial statements		Separate financial statements	
	<u>Note</u>	<u>2018</u>	<u>2017</u>	<u>2018</u>	<u>2017</u>
<b>Liabilities and shareholders' equity</b>					
<b>Current liabilities</b>					
Trade and other payables	6, 20	134,318,672	127,840,506	95,095,991	88,315,016
Current portion of long-term loans	21	435,000,000	480,000,000	435,000,000	480,000,000
Current portion of debentures	22	1,500,000,000	1,000,000,000	1,500,000,000	1,000,000,000
Income tax payable		308,594,603	269,785,430	229,374,885	208,300,796
Accrued interest		97,438,155	100,018,297	97,438,155	100,018,297
Other current liabilities		69,368,930	68,680,219	47,105,342	46,506,903
<b>Total current liabilities</b>		<u>2,544,720,360</u>	<u>2,046,324,452</u>	<u>2,404,014,373</u>	<u>1,923,141,012</u>
<b>Non-current liabilities</b>					
Retention payable - subsidiary	6	-	-	5,000,000	5,000,000
Long-term loans, net of current portion	21	3,360,000,000	3,795,000,000	3,360,000,000	3,795,000,000
Debentures, net of current portion	22	4,895,795,356	5,395,118,308	4,895,795,356	5,395,118,308
Provision for long-term employee benefits	23	54,360,458	40,252,967	28,715,854	21,318,624
Deferred tax liabilities	27	110,644,485	122,439,796	82,980,854	90,586,456
<b>Total non-current liabilities</b>		<u>8,420,800,299</u>	<u>9,352,811,071</u>	<u>8,372,492,064</u>	<u>9,307,023,388</u>
<b>Total liabilities</b>		10,965,520,659	11,399,135,523	10,776,506,437	11,230,164,400

The accompanying notes are an integral part of the financial statements.



# Statement of financial position (continued)

TTW Public Company Limited and its subsidiaries

As at 31 December 2018

(Unit: Baht)

		Consolidated financial statements		Separate financial statements	
	Note	2018	2017	2018	2017
Shareholders' equity					
Share capital					
Registered					
3,990,000,000 ordinary shares of Baht 1 each		3,990,000,000	3,990,000,000	3,990,000,000	3,990,000,000
Issued and fully paid-up					
3,990,000,000 ordinary shares of Baht 1 each		3,990,000,000	3,990,000,000	3,990,000,000	3,990,000,000
Share premium		2,637,769,601	2,637,769,601	2,637,769,601	2,637,769,601
Retained earnings					
Appropriated - statutory reserve	24	399,000,000	399,000,000	399,000,000	399,000,000
Appropriated - other reserve	25	1,691,230,767	1,691,230,767	1,691,230,767	1,691,230,767
Unappropriated		4,147,556,393	3,699,628,987	2,169,941,899	1,897,309,885
Other components of shareholders' equity		(543,983,701)	(582,130,970)	-	-
Equity attributable to owners of the Company		12,321,573,060	11,835,498,385	10,887,942,267	10,615,310,253
Non-controlling interests of the subsidiaries		43,280,512	42,407,235	-	-
Total shareholders' equity		12,364,853,572	11,877,905,620	10,887,942,267	10,615,310,253
Total liabilities and shareholders' equity		23,330,374,231	23,277,041,143	21,664,448,704	21,845,474,653

The accompanying notes are an integral part of the financial statements.

Directors

# Statement of comprehensive income

TTW Public Company Limited and its subsidiaries

For the year ended 31 December 2018

(Unit: Baht)

	Note	Consolidated financial statements		Separate financial statements	
		2018	2017	2018	2017
<b>Profit or loss:</b>					
<b>Revenues</b>					
Sales of treated water to public sector agency:					
Sales of treated water - minimum offtake quantities		5,049,710,504	5,003,360,943	3,408,495,304	3,364,759,143
Sales of treated water - above minimum offtake quantities		546,250,873	264,938,943	354,594,781	200,560,551
Sales of treated water to private sector agencies		211,444,728	206,194,672	211,444,728	206,194,672
Total sales of treated water	28	5,807,406,105	5,474,494,558	3,974,534,813	3,771,514,366
Service income		118,303,585	120,748,441	42,131,496	42,787,851
Interest income		11,257,842	13,119,225	37,057,042	54,429,769
Dividend income	11, 12	-	-	929,013,660	962,108,563
Other income		11,568,722	139,085,792	21,605,098	142,109,627
<b>Total revenues</b>		<b>5,948,536,254</b>	<b>5,747,448,016</b>	<b>5,004,342,109</b>	<b>4,972,950,176</b>
<b>Expenses</b>					
Cost of sales of treated water and services		1,722,234,676	1,564,424,330	1,011,001,001	925,274,978
Administrative expenses		280,326,180	257,303,906	229,721,740	199,357,257
Amortisation of investments in subsidiaries	11	-	-	221,494,148	221,494,148
Amortisation of rights to produce and sell treated water					
and treat waste water from private sector agency	17	53,494,667	50,474,847	53,494,667	50,474,847
Amortisation of rights to produce and sell treated water					
from business acquisition	18	195,432,749	195,432,749	-	-
<b>Total expenses</b>		<b>2,251,488,272</b>	<b>2,067,635,832</b>	<b>1,515,711,556</b>	<b>1,396,601,230</b>
<b>Profit before share of profit from investment</b>					
<b>in associate, finance cost and income tax expenses</b>		<b>3,697,047,982</b>	<b>3,679,812,184</b>	<b>3,488,630,553</b>	<b>3,576,348,946</b>
Share of profit from investment in associate	12	151,624,962	40,185,469	-	-
<b>Profit before finance cost and income tax expenses</b>		<b>3,848,672,944</b>	<b>3,719,997,653</b>	<b>3,488,630,553</b>	<b>3,576,348,946</b>
Finance cost		(371,677,534)	(407,025,029)	(371,677,534)	(407,025,029)
<b>Profit before income tax expenses</b>		<b>3,476,995,410</b>	<b>3,312,972,624</b>	<b>3,116,953,019</b>	<b>3,169,323,917</b>
Income tax expenses	27	(616,091,619)	(632,221,086)	(450,321,097)	(469,823,369)
<b>Profit for the year</b>		<b>2,860,903,791</b>	<b>2,680,751,538</b>	<b>2,666,631,922</b>	<b>2,699,500,548</b>

The accompanying notes are an integral part of the financial statements.

# Statement of comprehensive income (continued)

TTW Public Company Limited and its subsidiaries

For the year ended 31 December 2018

(Unit: Baht)

	<b>Consolidated financial statements</b>		<b>Separate financial statements</b>	
<b>Note</b>	<b>2018</b>	<b>2017</b>	<b>2018</b>	<b>2017</b>
<b>Other comprehensive income:</b>				
<i>Other comprehensive income to be reclassified to profit or loss in subsequent periods:</i>				
Unrealised gain from cash flow hedges				
- net of income tax	37,677,581	71,676,718	-	-
Gain on change in value of available-for-sale investments				
- net of income tax	469,688	4,000,314	-	-
<i>Other comprehensive income not to be reclassified to profit or loss in subsequent periods</i>				
Actuarial gain (loss) - net of income tax	-	(2,682,991)	-	821,574
<b>Other comprehensive income for the year</b>	<b>38,147,269</b>	<b>72,994,041</b>	<b>-</b>	<b>821,574</b>
<b>Total comprehensive income for the year</b>	<b>2,899,051,060</b>	<b>2,753,745,579</b>	<b>2,666,631,922</b>	<b>2,700,322,122</b>
<b>Profit attributable to:</b>				
Equity holders of the Company	2,841,927,314	2,663,247,846	2,666,631,922	2,699,500,548
Non-controlling interests of the subsidiaries	18,976,477	17,503,692		
	<b>2,860,903,791</b>	<b>2,680,751,538</b>		
<b>Total comprehensive income attributable to:</b>				
Equity holders of the Company	2,880,074,583	2,736,241,887	2,666,631,922	2,700,322,122
Non-controlling interests of the subsidiaries	18,976,477	17,503,692		
	<b>2,899,051,060</b>	<b>2,753,745,579</b>		
<b>Basic earnings per share</b>	<b>29</b>			
Profit attributable to equity holders of the Company	0.71	0.67	0.67	0.68

The accompanying notes are an integral part of the financial statements.

# Cash flows statement

## TTW Public Company Limited and its subsidiaries

For the year ended 31 December 2018

(Unit: Baht)

	Consolidated financial statements		Separate financial statements	
	2018	2017	2018	2017
<b>Cash flows from operating activities</b>				
Profit before tax	3,476,995,410	3,312,972,624	3,116,953,019	3,169,323,917
Adjustments to reconcile profit before tax to net cash provided by (paid from) operating activities:				
Depreciation and amortisation	812,925,018	733,990,700	471,995,460	440,352,261
Amortisation of investments in subsidiaries	-	-	221,494,148	221,494,148
Amortisation of rights to produce and sell treated water from business acquisition	195,432,749	195,432,749	-	-
Amortisation of rights to produce and sell treated water and treat waste water from private sector agency	53,494,667	50,474,847	53,494,667	50,474,847
Loss (gain) on sales/written off of equipment	(788,010)	8,412	(795,577)	-
Share of profit from investment in associate	(151,624,962)	(40,185,469)	-	-
Dividend income	-	-	(929,013,660)	(962,108,563)
Withholding tax deducted at source written off	2,093,608	862,055	-	-
Allowance for doubtful accounts	10,063,547	10,063,547	5,610,428	5,610,428
Provision for long-term employee benefits	14,463,821	7,626,487	7,397,230	5,229,739
Interest expenses	371,677,534	407,025,029	371,677,534	407,025,029
Profit from operating activities before changes in operating assets and liabilities	4,784,733,382	4,678,270,981	3,318,813,249	3,337,401,806
Operating assets (increase) decrease				
Trade and other receivables	(12,452,481)	(58,578,990)	(10,837,880)	(32,066,351)
Raw materials and supplies	(4,952,519)	(1,354,168)	(4,064,842)	(1,050,227)
Other current assets	2,864,719	12,038,687	2,381,599	12,488,170
Other non-current assets	31,436,687	457,684	31,436,689	469,685
Operating liabilities increase (decrease)				
Trade and other payables	7,318,071	(201,498,776)	9,300,881	(205,686,403)
Other current liabilities	688,711	10,576,069	598,439	8,675,937
Cash paid for long-term employee benefits	(356,330)	(1,930,496)	-	(779,146)
Cash from operating activities	4,809,280,240	4,437,980,991	3,347,628,135	3,119,453,471
Cash paid for interest expenses	(372,477,781)	(405,861,418)	(372,477,781)	(405,861,418)
Cash paid for corporate income tax	(592,663,313)	(614,889,504)	(436,852,609)	(442,510,247)
<b>Net cash from operating activities</b>	<b>3,844,139,146</b>	<b>3,417,230,069</b>	<b>2,538,297,745</b>	<b>2,271,081,806</b>

The accompanying notes are an integral part of the financial statements.

# Cash flows statement (continued)

TTW Public Company Limited and its subsidiaries

For the year ended 31 December 2018

(Unit: Baht)

	Consolidated financial statements		Separate financial statements	
	2018	2017	2018	2017
<b>Cash flows from investing activities</b>				
Decrease (increase) in current investments	(1,157,791,935)	2,114,513,178	(1,099,432,543)	2,022,825,819
Increase in other long-term investments	-	(14,000,000)	-	-
Decrease in long-term loans to related party	-	-	367,140,000	367,140,000
Increase in property, plant and equipment	(21,319,576)	(12,731,564)	(18,493,919)	(10,472,329)
Cash paid for capitalised interest	-	(45,656,464)	-	(45,656,464)
Increase in assets for production of treated water				
with public sector agency - assets that are owned by the Company	(19,431,879)	(403,297,732)	(19,431,879)	(403,297,732)
Increase in assets for production of treated water that must be transferred at the end of concession of subsidiary	(1,370,000)	(440,000)	-	-
Increase in rights to produce and sell treated water and treat waste water from private sector agency	(3,601,400)	(15,944,106)	(3,601,400)	(15,944,106)
Proceeds from sales of equipment	816,603	-	811,324	-
Dividend received	41,977,000	111,938,666	929,013,660	962,108,563
Increase in advance payment to subcontractor - related party	(7,605,850)	-	(7,605,850)	-
<b>Net cash from (used in) investing activities</b>	<b>(1,168,327,037)</b>	<b>1,734,381,978</b>	<b>148,399,393</b>	<b>2,876,703,751</b>
<b>Cash flows from financing activities</b>				
Repayment of long-term loans	(480,000,000)	(2,670,000,000)	(480,000,000)	(2,670,000,000)
Cash received from debentures	998,897,153	-	998,897,153	-
Repayment of debentures	(1,000,000,000)	-	(1,000,000,000)	-
Dividend paid	(2,394,072,370)	(2,393,739,859)	(2,394,072,370)	(2,393,739,859)
Dividend paid for non-controlling interests of the subsidiary	(18,103,200)	(17,350,799)	-	-
<b>Net cash used in financing activities</b>	<b>(2,893,278,417)</b>	<b>(5,081,090,658)</b>	<b>(2,875,175,217)</b>	<b>(5,063,739,859)</b>
<b>Net increase (decrease) in cash and cash equivalents</b>	<b>(217,466,308)</b>	<b>70,521,389</b>	<b>(188,478,079)</b>	<b>84,045,698</b>
Cash and cash equivalents at beginning of year	316,808,375	246,286,986	280,915,300	196,869,602
<b>Cash and cash equivalents at end of year</b>	<b>99,342,067</b>	<b>316,808,375</b>	<b>92,437,221</b>	<b>280,915,300</b>

The accompanying notes are an integral part of the financial statements.

# Cash flows statement (continued)

TTW Public Company Limited and its subsidiaries

For the year ended 31 December 2018

(Unit: Baht)

	Consolidated financial statements		Separate financial statements	
	2018	2017	2018	2017
<b>Supplemental cash flows information</b>				
Non-cash transactions				
Unrealised loss on change in value of available-for-sale	(275,000)	-	-	-
Increase (decrease) in dividend payable	(72,462)	138,551	(72,462)	138,551
Increase in accounts receivable from securities trading	(8,844,605)	(7,792,159)	(8,844,605)	(7,792,159)
Increase (decrease) in accounts payable from securities trading	(8,536,086)	4,236,550	(8,536,086)	4,236,550
Portion of advance payment to subcontractor deducted from payment for equipment	-	1,244,416	-	1,244,416
Portion of advance payment to subcontractor deducted from payment for assets for production of treated water with public sector agency	6,280,550	7,703,668	6,280,550	7,703,668
Transfer property, plant and equipment to (from) assets for production of treated water with public sector agency	(4,396,025)	7,700,000	(4,396,025)	7,700,000
Transfer property, plant and equipment to rights to produce and sell treated water and treat waste water from public sector agency	-	134,711,099	-	134,711,099
Transfer assets for production of treated water with public sector agency to rights to produce and sell treated water and treat waste water	-	(93,459)	-	(93,458)
Transfer assets for production of treated water with public sector agency to other non-current assets	-	(502,111)	-	(502,111)
Increase in property, plant and equipment from other payable	1,570,093	-	-	-
Increase in equipment from construction payable	5,690,320	-	5,690,320	-

The accompanying notes are an integral part of the financial statements.



# Statement of changes in shareholders' equity

TTW Public Company Limited and its subsidiaries

For the year ended 31 December 2018

(Unit: Baht)

Consolidated financial statements													
Equity attributable to owners of the Company													
Note	Issued and paid-up share capital	Share premium	Appropriated - statutory reserve	Appropriated - other reserve	Retained earnings	Other components of equity					Total equity attributable to owners of the Company	Equity attributable to non-controlling interests of the subsidiaries	Total shareholders' equity
						Surplus on changes in value of available-for-sale investments		Difference on reorganisation of business of group companies		Total other components of shareholders' equity			
						Unappropriated	Unrealised gain (loss) from cash flow hedges	Unrealised gain (loss) from cash flow hedges	Unrealised gain (loss) from cash flow hedges				
<b>Balance as at 1 January 2017</b>	3,990,000,000	2,637,769,601	399,000,000	1,691,230,767	3,432,942,542	4,973,988	(62,419,124)	(600,362,866)	(657,808,002)	11,493,134,908	42,254,342	11,535,389,250	
Profit for the year	-	-	-	-	2,663,247,846	-	-	-	-	2,663,247,846	17,503,692	2,680,751,538	
Other comprehensive income for the year	-	-	-	-	(2,682,991)	4,000,314	71,676,718	-	75,677,032	72,994,041	-	72,994,041	
Total comprehensive income for the year	-	-	-	-	2,660,564,855	4,000,314	71,676,718	-	75,677,032	2,736,241,887	17,503,692	2,753,745,579	
Dividend paid	-	-	-	-	(2,393,878,410)	-	-	-	-	(2,393,878,410)	-	(2,393,878,410)	
Decrease in non-controlling interests of the subsidiary	-	-	-	-	-	-	-	-	-	-	(17,350,799)	(17,350,799)	
from dividend payment of the subsidiary	-	-	-	-	-	-	-	-	-	-	42,407,235	11,877,905,620	
<b>Balance as at 31 December 2017</b>	3,990,000,000	2,637,769,601	399,000,000	1,691,230,767	3,699,628,987	8,974,302	9,257,594	(600,362,866)	(582,130,970)	11,835,498,385	42,407,235	11,877,905,620	
<b>Balance as at 1 January 2018</b>	3,990,000,000	2,637,769,601	399,000,000	1,691,230,767	3,699,628,987	8,974,302	9,257,594	(600,362,866)	(582,130,970)	11,835,498,385	42,407,235	11,877,905,620	
Profit for the year	-	-	-	-	2,841,927,314	-	-	-	-	2,841,927,314	18,976,477	2,860,903,791	
Other comprehensive income for the year	-	-	-	-	-	469,688	37,677,581	-	38,147,269	38,147,269	-	38,147,269	
Total comprehensive income for the year	-	-	-	-	2,841,927,314	469,688	37,677,581	-	38,147,269	2,880,074,583	18,976,477	2,899,051,060	
Dividend paid	-	-	-	-	(2,393,999,908)	-	-	-	-	(2,393,999,908)	-	(2,393,999,908)	
Decrease in non-controlling interests of the subsidiary	-	-	-	-	-	-	-	-	-	-	(18,103,200)	(18,103,200)	
from dividend payment of the subsidiary	-	-	-	-	-	-	-	-	-	-	43,280,512	12,364,853,572	
<b>Balance as at 31 December 2018</b>	3,990,000,000	2,637,769,601	399,000,000	1,691,230,767	4,147,556,393	9,443,990	46,935,175	(600,362,866)	(543,983,701)	12,321,573,060	43,280,512	12,364,853,572	

The accompanying notes are an integral part of the financial statements.

# Statement of changes in shareholders' equity (continued)

TTW Public Company Limited and its subsidiaries

For the year ended 31 December 2018

(Unit: Baht)

	Separate financial statements					
	Issued and paid-up share capital	Share premium	Retained earnings			Total shareholders' equity
			Appropriated - statutory reserve	Appropriated - other reserve	Unappropriated	
<b>Balance as at 1 January 2017</b>	3,990,000,000	2,637,769,601	399,000,000	1,691,230,767	1,590,866,173	10,308,866,541
Profit for the year	-	-	-	-	2,699,500,548	2,699,500,548
Other comprehensive income for the year	-	-	-	-	821,574	821,574
Total comprehensive income for the year	-	-	-	-	2,700,322,122	2,700,322,122
Dividend paid	-	-	-	-	(2,393,878,410)	(2,393,878,410)
<b>Balance as at 31 December 2017</b>	<u>3,990,000,000</u>	<u>2,637,769,601</u>	<u>399,000,000</u>	<u>1,691,230,767</u>	<u>1,897,309,885</u>	<u>10,615,310,253</u>
						-
<b>Balance as at 1 January 2018</b>	3,990,000,000	2,637,769,601	399,000,000	1,691,230,767	1,897,309,885	10,615,310,253
Profit for the year	-	-	-	-	2,666,631,922	2,666,631,922
Other comprehensive income for the year	-	-	-	-	-	-
Total comprehensive income for the year	-	-	-	-	2,666,631,922	2,666,631,922
Dividend paid	-	-	-	-	(2,393,999,908)	(2,393,999,908)
<b>Balance as at 31 December 2018</b>	<u>3,990,000,000</u>	<u>2,637,769,601</u>	<u>399,000,000</u>	<u>1,691,230,767</u>	<u>2,169,941,899</u>	<u>10,887,942,267</u>

The accompanying notes are an integral part of the financial statements.

# // Notes to consolidated financial statements

## TTW Public Company Limited and its subsidiaries

For the year ended 31 December 2018

### 1. General information

TTW Public Company Limited (“the Company”) is a public company incorporated and domiciled in Thailand. Its major shareholder is Mitsui Water Holdings (Thailand) Company Limited, which was incorporated in Thailand. The Company is principally engaged in the production and sale of treated water to the Provincial Waterworks Authority (“PWA”) in the Amphur Nakorn Chaisri, Amphur Sam Pran, and Amphur Budha Monthon areas of Nakhon Pathom and the Amphur Muang and Amphur Kratumban areas of Samut Sakhon, under the “Water Purchase Agreement” made with the PWA dated 21 September 2000 (An amendment agreement dated 29 December 2008), which covers a period of 30 years as from the Actual Commencement Date (21 July 2004), and under the Concession to operate treated water granted by the Ministry of Natural Resources and Environment (“the Concessionaire”) for a period of 25 years commencing on 11 March 2005. The Company has to comply with certain conditions as stipulated in the Water Purchase Agreement and the Concession.

The terms of the Concession include certain significant conditions, such as that when the Company has completed half of the concession period, if the government or the local government agency wish to purchase the water production business of the Company, the Concessionaire is entitled to cancel the concession in order to purchase it, or permit the relevant local government agency to purchase it, at market price. However, it must provide the Company with advance notice of six months of such action.

The Company’s registered office is at 30/130 Moo 12, Budha Monthon 5 Road, RaiKhing, Sam Pran, Nakhon Pathom.

On 3 July 2018, a meeting of the Company’s Board of Directors resolved to give the rectification to establishment of Myanmar Tap Water Company Limited (“MTW”) by Thai Water Operations Company Limited (“TWO”), a subsidiary of the Company, and Z Corporation Company Limited (“Z Corp”), which was a legal entity established in the Republic of the Union of Myanmar and which was not a related party of the Company. The registered share capital of Myanmar Tap Water Company Limited was USD 12 million in which Thai Water Operations Company Limited, holds a 70 percent interest and Z Corporation Company Limited holds a 30 percent interest. Myanmar Tap Water Company Limited invested in the Tap Water Project in Mawlamyine, the Republic of the Union of Myanmar. The value of investment in the Project was approximately USD 15 million (equivalent to approximately Baht 486 million). Thus far, no agreements have been signed since the project is put on hold. However, the Company gives highest priority to the interest of the shareholders

## 2. Basis of preparation

- 2.1 The financial statements have been prepared in accordance with Thai Financial Reporting Standards enunciated under the Accounting Profession Act B.E. 2547 and their presentation has been made in compliance with the stipulations of the Notification of the Department of Business Development dated 11 October 2016, issued under the Accounting Act B.E. 2543.

The financial statements in Thai language are the official statutory financial statements of the Company. The financial statements in English language have been translated from the Thai language financial statements.

The financial statements have been prepared on a historical cost basis except where otherwise disclosed in the accounting policies.

## 2.2 Basis of consolidation

- a) The consolidated financial statements include the financial statements of TTW Public Company Limited (“the Company”) and the following subsidiary companies (“the subsidiaries”):

Company's name	Nature of business	Country of incorporation	Percentage of shareholding	
			<u>2018</u> (%)	<u>2017</u> (%)
Pathum Thani Water Company Limited	Production and sale of treated water in Pathumthani	Thailand	98.0	98.0
Thai Water Operations Company Limited (31.5% held by Pathum Thani Water Company Limited)	Operating and maintenance of water supply project	Thailand	68.5	68.5

- b) The Company is deemed to have control over an investee or subsidiaries if it has rights, or is exposed, to variable returns from its involvement with the investee, and it has the ability to direct the activities that affect the amount of its returns.
- c) Subsidiaries are fully consolidated, being the date on which the Company obtains control, and continue to be consolidated until the date when such control ceases.
- d) The financial statements of the subsidiaries are prepared using the same significant accounting policies as the Company.
- e) Material balances and transactions between the Company and its subsidiaries have been eliminated from the consolidated financial statements.

- f) Non-controlling interests represent the portion of profit or loss and net assets of the subsidiaries that are not held by the Company and are presented separately in the consolidated profit or loss and within equity in the consolidated statement of financial position.

2.3 The separate financial statements present investments in subsidiaries and associate under the cost method.

### **3. New financial reporting standards**

#### **(a) Financial reporting standards that became effective in the current year**

During the year, the Company and its subsidiaries have adopted the revised financial reporting standards and interpretations (revised 2017) which are effective for fiscal years beginning on or after 1 January 2018. These financial reporting standards were aimed at alignment with the corresponding International Financial Reporting Standards with most of the changes and clarifications directed towards disclosures in the notes to financial statements. The adoption of these financial reporting standards does not have any significant impact on the Company and its subsidiaries' financial statements.

#### **(b) Financial reporting standards that will become effective for fiscal years beginning on or after 1 January 2019**

The Federation of Accounting Professions issued a number of revised and new financial reporting standards and interpretations (revised 2018) which are effective for fiscal years beginning on or after 1 January 2019. These financial reporting standards were aimed at alignment with the corresponding International Financial Reporting Standards with most of the changes directed towards clarifying accounting treatment and providing accounting guidance for users of the standards.

The management of the Company and its subsidiaries believe that most of the revised financial reporting standards will not have any significant impact on the financial statements when they are initially applied. However, the new standard involves changes to key principles, as summarised below.

## **TFRS 15 Revenue from Contracts with Customers**

TFRS 15 supersedes the following accounting standards together with related Interpretations.

TAS 11 (revised 2017)	Construction contracts
TAS 18 (revised 2017)	Revenue
TSIC 31 (revised 2017)	Revenue - Barter Transactions Involving Advertising Services
TFRIC 13 (revised 2017)	Customer Loyalty Programmes
TFRIC 15 (revised 2017)	Agreements for the Construction of Real Estate
TFRIC 18 (revised 2017)	Transfers of Assets from Customers

Entities are to apply this standard to all contracts with customers unless those contracts fall within the scope of other standards. The standard establishes a five-step model to account for revenue arising from contracts with customers, with revenue being recognized at an amount that reflects the consideration to which an entity expects to be entitled in exchange for transferring goods or services to a customer. The standard requires entities to exercise judgement, taking into consideration all of the relevant facts and circumstances when applying each step of the model.

The management of the Company and its subsidiaries believe that this standard will not have any significant impact on the financial statements when it is initially applied.

### **(c) Financial reporting standards related to financial instruments that will become effective for fiscal years beginning on or after 1 January 2020**

During the current year, the Federation of Accounting Professions issued a set of TFRSs related to financial instruments, which consists of five accounting standards and interpretations, as follows:

Financial reporting standards:

TFRS 7	Financial Instruments: Disclosures
TFRS 9	Financial Instruments

Accounting standard:

TAS 32	Financial Instruments: Presentation
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Financial Reporting Standard Interpretations:

TFRIC 16	Hedges of a Net Investment in a Foreign Operation
TFRIC 19	Extinguishing Financial Liabilities with Equity Instruments

These TFRSs related to financial instruments make stipulations relating to the classification of financial instruments and their measurement at fair value or amortised cost (taking into account the type of instrument, the characteristics of the contractual cash flows and the Company's business model), calculation of impairment using the expected credit loss method, and hedge accounting. These include stipulations regarding the presentation and disclosure of financial instruments. When the TFRSs related to financial instruments are effective, some accounting standards, interpretations and guidance which are currently effective will be cancelled.

The management of the Company and its subsidiaries is currently evaluating the impact of these standards to the financial statements in the year when they are adopted.

#### **4. Significant accounting policies**

##### **4.1 Revenues recognition**

###### *Sales of treated water*

Sales of treated water are recognised when the Company and a subsidiary supply the water to the Provincial Waterworks Authority, and comprise the invoiced value, excluding value added tax, of the treated water supplied, after deducting discounts and allowances.

###### *Service income*

Service income presents the invoiced value, excluding value added tax, of services rendered.

###### *Interest income*

Interest income is recognised on an accrual basis based on the effective interest rate.

###### *Dividends*

Dividends are recognised when the right to receive the dividends is established.

###### *Other income and expenses*

Other income and expenses are recognised on an accrual basis

##### **4.2 Cash and cash equivalents**

Cash and cash equivalents consist of cash in hand and at banks, and all highly liquid investments with an original maturity of three months or less and not subject to withdrawal restrictions.



#### **4.3 Trade accounts receivable**

Trade accounts receivable are stated at the net realisable value. Allowance for doubtful accounts is provided for the estimated losses that may be incurred in collection of receivables. The allowance is generally based on collection experience and analysis of debt aging.

#### **4.4 Raw materials and supplies**

Raw materials and supplies are valued at the lower of cost (under the first-in, first-out method) and net realisable value and are charged to treated water production costs whenever consumed.

#### **4.5 Investments**

- a) Investments in securities held for trading are stated at fair value. Changes in the fair value of these securities are recorded in profit or loss.
- b) Investment in available-for-sale securities are stated at fair value. Changes in the fair value of these securities are recorded in other comprehensive income, and will be recorded in profit or loss when the securities are sold.
- c) Investments in debt securities, both due within one year and expected to be held to maturity, are recorded at amortised cost. The premium/discount on debt securities is amortised/accreted by the effective rate method with the amortised/accreted amount presented as an adjustment to the interest income.
- d) Investment in associate is accounted for in the consolidated financial statements using the equity method.
- e) Investment in subsidiaries and associate are accounted for in the separate financial statements using the cost method.

The fair value of marketable securities is based on the latest bid price of the last working day of the year. The fair value of debt instruments is determined based on yield rates quoted by the Thai Bond Market Association. The fair value of unit trusts is determined from their net asset value.

The weighted average method is used for computation of the cost of investments.

#### 4.6 Investments in subsidiaries

Investments in subsidiaries are accounted for in the separate financial statements using the cost method.

Investment costs of subsidiaries are the values paid for their acquisition. The subsidiary is engaged in business under the agreement for the production and sale of treated water with the Provincial Waterworks Authority and concessions granted by state enterprises or government agencies, which have defined fixed periods of operation, as stipulated in the agreement and concessions; and the subsidiary has committed to transfer most of its assets used in the operation to the Provincial Waterworks Authority. Hence, parts of the investment cost are deemed to be investments in the acquisition of rights to operate business under the agreement and concessions, and are amortised on a straight-line basis over the remaining periods of the agreements, commencing from the date of investment in the subsidiary. This amortised amount is presented as amortisation of investments in subsidiary, and recognised as an expense in profit or loss.

In addition, parts of the investment cost in the subsidiary to which the subsidiary transferred most of its operations after investment, in order to reduce future operating costs, was amounts paid for acquisition of such operations. These are amortised on a straight-line basis over the remaining period of the Water Purchase Agreement made between the Company and the Provincial Waterworks Authority, commencing from the date of investing in the subsidiary, and presented as amortisation of investments in subsidiary. The amortised amount is recognised as expense in profit or loss.

#### 4.7 Property, plant and equipment/Depreciation

Land is stated at cost. Building and equipment are stated at cost less accumulated depreciation and allowance for loss on impairment of assets (if any).

Depreciation for assets is generally calculated by reference to their costs on the straight-line basis over estimated useful lives of 3, 5 and 10 years. However depreciation of the Company's assets used for production of treated water is calculated using the units-of-production method, based on the following formula:

$$\begin{aligned}\text{Depreciation for the period} &= \text{Net assets for production of treated water at the beginning of the period} \times \text{Percentage of treated water produced in the period} \\ \text{Percentage of treated water produced in the period} &= \frac{\text{Current period's actual production of treated water}}{(\text{Actual production of treated water for the period} + \text{Projected total production of treated water over the remaining term of the Water Purchase Agreement})} \\ \text{Net assets for production of treated water at the beginning of the period} &= \text{Total assets for production of treated water as at the beginning of the period} - \text{Accumulated depreciation as at the beginning of the period}\end{aligned}$$

Assets for production of treated water consist of costs of construction of a water treatment plant and distribution system, and related interest expenses and financial costs.

Depreciation is included in determining income.

No depreciation is provided on land and assets under installation.

An item of property, plant and equipment is derecognised upon disposal or when no future economic benefits are expected from its use or disposal. Any gain or loss arising on disposal of an asset is included in profit or loss when the asset is derecognised.

#### **4.8 Assets for production of treated water that must be transferred at end of concession and amortisation**

Assets for production of treated water of Pathum Thani Water Company Limited that must be transferred to the Provincial Waterworks Authority at the end of the concession to produce and sell treated water (land, water treatment plant and distribution system) are stated at cost less accumulated amortisation and any impairment losses. Amortisation of assets for production of treated water is calculated using the units-of-production method, based on the following formula:

$$\begin{aligned}
 \text{Amortisation for the period} &= \text{Net assets for production of treated water that must be transferred} \\
 &\quad \text{at end of concession at the beginning of the period} \times \text{Percentage} \\
 &\quad \text{of treated water produced in the period} \\
 \\
 \text{Percentage of treated water} &= \frac{\text{Current period's actual production of treated water}}{\text{(Actual production of treated water for the period + Projected total} \\
 \text{produced in the period} &\quad \text{production of treated water over the remaining term of} \\
 &\quad \text{concession for production and sale of treated water)}} \\
 \\
 \text{Net assets for production of} &= \text{Total assets for production of treated water that must be transferred} \\
 \text{treated water that must be} &\quad \text{at end of concession - Accumulated amortisation as at the} \\
 \text{transferred at end of concession} &\quad \text{beginning of the period} \\
 \text{at the beginning of the period} &
 \end{aligned}$$

Amortisation is included in determining income.

No amortisation is provided on assets under installation.

#### 4.9 Rights to produce and sell treated water and treat waste water and amortisation

The Company recorded cost of rights to produce and sell treated water and treat waste water ("Operation rights") at cost as at the acquisition date, and allocated such cost in line with forecasted revenues calculated as at the acquisition date.

##### a) Rights to produce and sell treated water

Rights to produce and sell treated water are stated at cost less accumulated amortisation and any impairment losses. Amortisation of the rights is calculated using the units-of-production method, based on the following formula:

Amortisation for the period = Net rights to produce and sell treated water as at the beginning of the period x Percentage of treated water produced in the period

Percentage of treated water produced in the period = 
$$\frac{\text{Current period's actual production of treatment water}}{(\text{Actual production of treated water for the period} + \text{Projected total production of treated water over the remaining term of operation rights})}$$

Net rights to produce and sell treated water at the beginning of the period = Total rights to treated water - Accumulated amortisation as at the beginning of the period

Amortisation is included in determining income.

##### b) Rights to treat waste water

Rights to treat waste water are stated at cost less accumulated amortisation and any impairment losses. Amortisation of the rights is calculated using the units-of-production method, based on the following formula:

Amortisation for the period = Net rights to treat waste water at the beginning of the period x Percentage of waste water treatment in the period

Percentage of waste water treated in the period = 
$$\frac{\text{Current period's actual treatment of waste water}}{(\text{Actual treatment of waste water for the period} + \text{Projected total treatment of waste water over the remaining term of operation rights})}$$

Net rights to treat waste water at the beginning of the period = Total rights to treat waste water - Accumulated amortisation as at the beginning of the period

Amortisation is included in determining income.

#### **4.10 Rights to produce and sell treated water from business acquisition and amortisation**

Rights to produce and sell treated water, which arose as a result of the acquisition of ordinary shares in Pathum Thani Water Company Limited being made at a cost higher than the fair value of this subsidiary, is regarded as an intangible asset with a definite life. It is carried at cost less accumulated amortisation and any impairment losses (if any).

The Company amortises it on a straight-line basis over the remaining period of the subsidiary's agreement for the production and sale of treated water, starting from the acquisition date, (approximately 16 years) and tested for impairment whenever there is an indication that it may be impaired. The amortisation period and the amortisation method for rights to produce and sell treated water are reviewed at least at each financial year end. The amortisation expense is charged to profit or loss.

#### **4.11 Borrowing costs**

Borrowing costs directly attributable to the acquisition, construction or production of an asset that necessarily takes a substantial period of time to get ready for its intended use or sale are capitalised as part of the cost of the respective assets. All other borrowing costs are expensed in the period they are incurred. Borrowing costs consist of interest and other costs that an entity incurs in connection with the borrowing of funds.

#### **4.12 Intangible assets**

The intangible assets (assets from which the subsidiary obtained the maintenance and management project) of the subsidiary are carried at cost less accumulated amortisation and any accumulated impairment losses.

Intangible assets with finite lives are amortised on a systematic basis over the economic useful life (5 years and 10 years) and tested for impairment whenever there is an indication that the intangible asset may be impaired. The amortisation period and the amortisation method of such intangible assets are reviewed at least at each financial year end. The amortisation expense is charged to profit or loss.

#### **4.13 Related party transactions**

Related parties comprise individuals or enterprises that control, or are controlled by, the Company, whether directly or indirectly, or which are under common control with the Company.

They also include associated companies, and individuals or enterprises which directly or indirectly own a voting interest in the Company that gives them significant influence over the Company, key management personnel, directors and officers with authority in the planning and direction of the Company's operations.

#### **4.14 Long-term leases**

Leases of property, plant or equipment which transfer substantially all the risks and rewards of ownership are classified as finance leases. Finance leases are capitalised at the lower of the fair value of the leased assets and the present value of the minimum lease payments. The outstanding rental obligations, net of finance charges, are included in long-term payables, while the interest element is charged to profit or loss over the lease period. The assets acquired under finance leases are depreciated over the shorter of the useful life of the asset and the lease period.

Leases of property, plant or equipment which do not transfer substantially all the risks and rewards of ownership are classified as operating leases. Operating lease payments are recognised as an expense in profit or loss on a straight line basis over the lease term.

#### **4.15 Impairment of assets**

At the end of each reporting period, the Company and its subsidiaries perform impairment reviews in respect of the property, plant and equipment and other intangible assets whenever events or changes in circumstances indicate that an asset may be impaired. The Company and its subsidiaries also carry out annual impairment reviews in respect of rights to produce and sell treated water. An impairment loss is recognised when the recoverable amount of an asset, which is the higher of the asset's fair value less costs to sell and its value in use, is less than the carrying amount.

An impairment loss is recognised in profit or loss.

#### **4.16 Employee benefits**

##### ***Short-term employee benefits***

Salaries, wages, bonuses and contributions to the social security fund are recognised as expenses when incurred.

##### ***Post-employment benefits***

##### ***Defined contribution plans***

The Company, its subsidiaries and their employees have jointly established a provident fund. The fund is monthly contributed by employees and by the Company and its subsidiaries. The fund's assets are held in a separate trust fund and the Company and its subsidiaries' contributions are recognised as expenses when incurred.

### *Defined benefit plans*

The Company and its subsidiaries have obligations in respect of the severance payments it must make to employees upon retirement under labor law. The Company and its subsidiaries treat these severance payment obligations as a defined benefit plan.

The obligation under the defined benefit plan is determined by a professionally qualified independent actuary based on actuarial techniques, using the projected unit credit method.

Actuarial gains and losses arising from defined benefit plans are recognised immediately in other comprehensive income.

## **4.17 Provisions**

Provisions are recognised when the Company and its subsidiaries have a present obligation as a result of a past event, it is probable that an outflow of resources embodying economic benefits will be required to settle the obligation, and a reliable estimate can be made of the amount of the obligation.

## **4.18 Income tax**

Income tax expense represents the sum of corporate income tax currently payable and deferred tax.

### **Current tax**

Current income tax is provided in the accounts at the amount expected to be paid to the taxation authorities, based on taxable profits determined in accordance with tax legislation.

### **Deferred tax**

Deferred income tax is provided on temporary differences between the tax bases of assets and liabilities and their carrying amounts at the end of each reporting period, using the tax rates enacted at the end of the reporting period.

The Company and its subsidiaries recognise deferred tax liabilities for all taxable temporary differences while they recognise deferred tax assets for all deductible temporary differences and tax losses carried forward to the extent that it is probable that future taxable profit will be available against which such deductible temporary differences and tax losses carried forward can be utilised.

At each reporting date, the Company and its subsidiaries review and reduce the carrying amount of deferred tax assets to the extent that it is no longer probable that sufficient taxable profit will be available to allow all or part of the deferred tax asset to be utilised.

The Company and its subsidiaries record deferred tax directly to shareholders' equity if the tax relates to items that are recorded directly to shareholders' equity.



#### **4.19 Hedge accounting - Cash flow hedges**

Associate applies hedge accounting when the risk that has been hedged can be clearly identified and the effectiveness of the hedge can be measured.

Gains or losses arising from changes in the fair value of hedging instruments that effectively hedge exposure to fluctuations in cash flows that are either attributable to a particular risk associated with financial asset, financial liability, or highly probable forecast transactions, are recognised directly in other comprehensive income and transferred to be recognised in profit or loss when the hedged cash flow transactions occur. However, if the hedging instruments are not effective, any gains or losses from changes in the fair value of the hedging instruments are recognised immediately to profit or loss.

#### **4.20 Fair value measurement**

Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between buyer and seller (market participants) at the measurement date. The Company and its subsidiaries apply a quoted market price in an active market to measure their assets and liabilities that are required to be measured at fair value by relevant financial reporting standards. Except in case of no active market of an identical asset or liability or when a quoted market price is not available, the Company and its subsidiaries measure fair value using valuation technique that are appropriate in the circumstances and maximises the use of relevant observable inputs related to assets and liabilities that are required to be measured at fair value.

All assets and liabilities for which fair value is measured or disclosed in the financial statements are categorised within the fair value hierarchy into three levels based on categorise of input to be used in fair value measurement as follows:

- Level 1 - Use of quoted market prices in an active market for such assets or liabilities
- Level 2 - Use of other observable inputs for such assets or liabilities, whether directly or indirectly
- Level 3 - Use of unobservable inputs such as estimates of future cash flows

At the end of each reporting period, the Company and its subsidiaries determine whether transfers have occurred between levels within the fair value hierarchy for assets and liabilities held at the end of the reporting period that are measured at fair value on a recurring basis.

## 5. Significant accounting judgements and estimates

The preparation of financial statements in conformity with financial reporting standards at times requires management to make subjective judgements and estimates regarding matters that are inherently uncertain. These judgements and estimates affect reported amounts and disclosures, and actual results could differ from these estimates. Significant judgements and estimates are as follows:

### **Assets for production of treated water and rights to produce and sell treated water and treat waste water**

In determining recognised the amortisation expenses of the assets for the production of treated water of the Company, the assets that must be transferred at the end of concession of the subsidiary, the rights to produce, sell treated water and treat waste water of the Company. The Company and its subsidiary used the units of production method which required an estimate of the number of units of treated water to be produced in the future, until the end of the concession period or the end of the operation contract. The management must use judgement to estimate the amount of future production, based on present production volumes, production capacity, demand from customers, economic and industry conditions. This affect the amount of the amortisation expenses.

## 6. Related party transactions

During the years, the Company and its subsidiaries had significant business transactions with related parties. Such transactions, which are summarised below, arose in the ordinary course of business and were concluded on commercial terms and bases agreed upon between the Company and those related parties.

					(Unit: Thousand Baht)
	Consolidated		Separate		
	financial statements		financial statements		Transfer pricing policy
	<u>2018</u>	<u>2017</u>	<u>2018</u>	<u>2017</u>	
<u>Transactions with subsidiary companies</u>					
(eliminated from the consolidated financial statements)					
Interest income	-	-	29,562	45,479	Minimum Loan Rate minus stipulated margin per annum
Management income	-	-	15,600	15,600	Based on contract
Dividend income	-	-	887,037	850,170	As declared
Cost of sales and services	-	-	36,444	35,569	By mutual agreement

(Unit: Thousand Baht)

	Consolidated		Separate		Transfer pricing policy
	financial statements		financial statements		
	2018	2017	2018	2017	
<b><u>Transaction with associate</u></b>					
Dividend income	-	-	41,977	111,939	As declared
<b><u>Transactions with related parties</u></b>					
Sales of treated water	46,904	38,514	46,904	38,514	Based on contract
Service income	3,232	2,706	3,232	2,706	Based on contract
Construction in progress	31,403	362,545	31,403	362,545	Based on contract
Cost of sales and services	3,713	2,709	3,713	2,709	Based on contract
Purchase of raw materials	1,769	673	1,769	673	Market price

As at 31 December 2018 and 2017, the balances of the accounts between the Company and those related companies are as follows:

(Unit: Thousand Baht)

	Consolidated		Separate	
	financial statements		financial statements	
	2018	2017	2018	2017
<b><u>Trade and other receivables - related parties (Note 9)</u></b>				
Subsidiaries	-	-	1,391	1,391
Related companies (related by shareholders or committees)	4,515	8,194	4,515	8,194
Related companies (entities under the group of Companies of the shareholders)	3,954	-	3,954	-
<b>Total trade and other receivables - related parties</b>	<b>8,469</b>	<b>8,194</b>	<b>9,860</b>	<b>9,585</b>
<b><u>Advance payment to subcontractor - related party</u></b>				
Related company (related by committees)	1,325	-	1,325	-
<b>Total advance payment to subcontractor - related party</b>	<b>1,325</b>	<b>-</b>	<b>1,325</b>	<b>-</b>
<b><u>Trade and other payables - related parties (Note 20)</u></b>				
Subsidiaries	-	-	3,262	3,157
Related companies (related by shareholders or committees)	9,039	241	9,039	241
Related companies (entities under the group of Companies of the shareholders)	583	100	583	100
<b>Total trade and other payables - related parties</b>	<b>9,622</b>	<b>341</b>	<b>12,884</b>	<b>3,498</b>
<b><u>Retention payable - subsidiary</u></b>	<b>-</b>	<b>-</b>	<b>5,000</b>	<b>5,000</b>
	<b>-</b>	<b>-</b>	<b>5,000</b>	<b>5,000</b>

### Long-term loans to related party

As at 31 December 2018 and 2017, the balance of long-term loans between the Company and a related party and the movement are as follows:

(Unit: Thousand Baht)

Company's name	Related by	Separate financial statements			
		Balance as at 31 December 2017	Increase during the year	Decrease during the year	Balance as at 31 December 2018
Pathum Thani Water Company Limited	Subsidiary				
Loan		828,220	-	(367,140)	461,080
Interest receivable		293	29,562	(29,638)	217
Total		<u>828,513</u>			<u>461,297</u>

(Unit: Thousand Baht)

	Separate financial statements	
	<u>2018</u>	<u>2017</u>
<b><u>Long-term loans to related party and interest receivable</u></b>		
Pathum Thani Water Company Limited		
Loan	461,080	828,220
Interest receivable	217	293
Total	<u>461,297</u>	<u>828,513</u>
<u>Less:</u> Current portion and interest receivable	<u>(289,857)</u>	<u>(367,433)</u>
<b>Long-term loans to related party, net of current portion</b>	<u>171,440</u>	<u>461,080</u>

Long-term loans to subsidiary were subject to interest at the Minimum Loan Rate minus a stipulated margin (MLR - margin) per annum. Repayment is to be made in quarterly installments and due in full within December 2022.

### Directors and management's benefits

During the years ended 31 December 2018 and 2017, the Company and its subsidiaries had employee benefit expenses payable to their directors and management as below.

(Unit: Thousand Baht)

	Consolidated financial statements		Separate financial statements	
	<u>2018</u>	<u>2017</u>	<u>2018</u>	<u>2017</u>
Short-term employee benefits	64,415	68,891	49,101	54,897
Post-employment benefits	2,299	3,438	2,002	3,193
Total	<u>66,714</u>	<u>72,329</u>	<u>51,103</u>	<u>58,090</u>

## 7. Cash and cash equivalents

	(Unit: Thousand Baht)			
	Consolidated		Separate	
	financial statements		financial statements	
	<u>2018</u>	<u>2017</u>	<u>2018</u>	<u>2017</u>
Cash	455	423	97	43
Bank deposits	98,887	316,385	92,340	280,872
Total	<u>99,342</u>	<u>316,808</u>	<u>92,437</u>	<u>280,915</u>

As at 31 December 2018 and 2017, bank deposits in saving accounts and fixed deposits carried interests between 0.05% and 0.50% per annum.

## 8. Current investments

The balances of current investments represent investments in trading securities and the 4 - 12 month fixed deposits, carrying interests and return on investments between 0.650% and 1.853% per annum (2017: between 0.65% and 4.38% per annum). The Company had maintained the fixed deposits according to the addition amendment of the agreement to the concession to operate treated water as described in Note 25.

	(Unit: Thousand Baht)			
	Consolidated		Separate	
	financial statements		financial statements	
	<u>2018</u>	<u>2017</u>	<u>2018</u>	<u>2017</u>
<b>Fixed deposits over 3 month but less than 1 year</b>				
	715,216	535,176	455,216	405,176
	<u>715,216</u>	<u>535,176</u>	<u>455,216</u>	<u>405,176</u>
<b>Investments in trading securities at fair value</b>				
Government and state enterprise bonds	819,392	522,967	819,392	522,967
Private sector debt securities	1,879,619	1,065,478	1,466,502	580,720
Marketable equity securities	85,654	235,849	85,654	235,849
	<u>2,784,665</u>	<u>1,824,294</u>	<u>2,371,548</u>	<u>1,339,536</u>
Total current investments	<u>3,499,881</u>	<u>2,359,470</u>	<u>2,826,764</u>	<u>1,744,712</u>

## 9. Trade and other receivables

	(Unit: Thousand Baht)			
	Consolidated financial statements		Separate financial statements	
	<u>2018</u>	<u>2017</u>	<u>2018</u>	<u>2017</u>
<u>Trade receivables - related parties</u>				
Aged on the basis of due dates				
Not yet due	4,491	3,896	4,491	3,896
Past due				
Up to 3 months	24	4,298	24	4,298
Total trade receivables - related parties	<u>4,515</u>	<u>8,194</u>	<u>4,515</u>	<u>8,194</u>
<u>Trade receivables - unrelated parties</u>				
Aged on the basis of due dates				
Not yet due	533,617	510,411	362,678	340,827
Past due				
Up to 3 months				
Over 12 months	2,225	11,121	2,225	11,121
Total trade receivables - unrelated parties	<u>535,842</u>	<u>521,532</u>	<u>364,903</u>	<u>351,948</u>
Total trade receivables	<u>540,357</u>	<u>529,726</u>	<u>369,418</u>	<u>360,142</u>
<u>Other receivables</u>				
Other receivables - related parties	3,954	-	5,345	1,391
Other receivables - unrelated parties	20,138	20,139	11,221	11,221
Interest receivables - unrelated parties	1,835	3,966	1,282	3,597
Other receivables from securities trading	18,391	9,547	18,391	9,547
Total other receivables	<u>44,318</u>	<u>33,652</u>	<u>36,239</u>	<u>25,756</u>
Less: Allowance for doubtful debts	<u>(20,127)</u>	<u>(10,064)</u>	<u>(11,221)</u>	<u>(5,610)</u>
Total other receivables - net	<u>24,191</u>	<u>23,588</u>	<u>25,018</u>	<u>20,146</u>
Total trade and other receivables - net	<u>564,548</u>	<u>553,314</u>	<u>394,436</u>	<u>380,288</u>

## 10. Raw materials and supplies

(Unit: Thousand Baht)

	Consolidated		Separate	
	financial statements		financial statements	
	<u>2018</u>	<u>2017</u>	<u>2018</u>	<u>2017</u>
Raw materials	7,581	5,666	5,381	3,842
Spare parts	20,426	17,389	11,380	8,854
Total	<u>28,007</u>	<u>23,055</u>	<u>16,761</u>	<u>12,696</u>

## 11. Investments in subsidiaries

Details of investments in subsidiaries as presented in separate financial statements are as follows:

(Unit: Thousand Baht)

Company's name	Paid-up capital		Shareholding percentage		Cost		Dividend received during the year	
	<u>2018</u>	<u>2017</u>	<u>2018</u>	<u>2017</u>	<u>2018</u>	<u>2017</u>	<u>2018</u>	<u>2017</u>
			(%)	(%)				
Pathum Thani Water								
Company Limited	1,200,000	1,200,000	98.0	98.0	3,998,310	3,998,310	887,037	850,170
Thai Water Operations								
Company Limited	60,000	60,000	68.5	68.5	700,000	700,000	-	-
					4,698,310	4,698,310	887,037	850,170
<u>Less:</u> Accumulated amortisation of investments in subsidiaries					(2,541,129)	(2,319,635)	-	-
<u>Less:</u> Dividend received from income before purchase of shares					(20,000)	(20,000)	-	-
Total					<u>2,137,181</u>	<u>2,358,675</u>	<u>887,037</u>	<u>850,170</u>



## 12. Investment in associate

### 12.1 Details of associate:

Company's name	Nature of business	Country of incorporation	Consolidated financial statements				(Unit: Thousand Baht)
			Shareholding percentage		Carrying amounts based on equity method		
			2018	2017	2018	2017	
			(%)	(%)			
CK Power Public Company Limited	Making investment in other companies	Thailand	25.31	25.31	4,228,013	4,656,518	4,508,502
Total					4,228,013	4,656,518	4,508,502

Company's name	Nature of business	Country of incorporation	Separate financial statements				(Unit: Thousand Baht)	
			Shareholding percentage		Carrying amounts based on cost method			
			2018		2017			
			2018	2017	2018	2017		
			(%)	(%)				
CK Power Public Company Limited	Making investment in other companies	Thailand	25.31	25.31	4,228,013	4,228,013	4,228,013	4,228,013
Total					4,228,013	4,228,013	4,228,013	4,228,013

## 12.2 Share of comprehensive income and dividend received

During the years, the Company has recognised its share of profit from investment in associate company in the consolidated financial statements and dividend income in the separate financial statements as follows:

Associate	Consolidated financial statements				(Unit: Thousand Baht) Separate financial statements	
	Share of profit from investment in associate during the year		Share of other comprehensive income from investment in associate during the year		Dividend received during the year	
	<u>2018</u>	<u>2017</u>	<u>2018</u>	<u>2017</u>	<u>2018</u>	<u>2017</u>
CK Power Public Company Limited	151,625	40,185	38,367	72,691	41,977	111,939
Total	151,625	40,185	38,367	72,691	41,977	111,939

## 12.3 Fair value of investment in listed associate

In respect of investment in associate that is listed company on the Stock Exchange of Thailand, its fair value is as follows:

Associate	(Unit: Thousand Baht) Fair values as at 31 December	
	<u>2018</u>	<u>2017</u>
CK Power Public Company Limited	9,253,596	7,537,203 <sup>(1)</sup>
Total	9,253,596	7,537,203

<sup>(1)</sup> Excluding the fair value of warrants amounting to Baht 250 million (2017: Baht 255 million).

## 12.4 Summarised financial information about material associate

Summarised information about financial position

	(Unit: Thousand Baht) CK Power Public Company Limited	
	<u>2018</u>	<u>2017</u>
Current assets	6,272,655	6,293,990
Non-current assets	56,230,452	54,167,611
Current liabilities	(2,487,714)	(2,669,365)
Non-current liabilities	(28,493,389)	(27,133,716)
Net assets	31,522,004	30,658,520
Equity attributable to non-controlling interest of the associate	(13,188,573)	(12,910,107)
Net assets of the Company	18,333,431	17,748,413
Shareholding percentage	25.31%	25.31%
Share of net assets	4,640,191	4,492,123
Goodwill	16,327	16,379
Carrying amounts of associate based on equity method	4,656,518	4,508,502

## Summarised information about comprehensive income

(Unit: Thousand Baht)

CK Power Public Company Limited

For the years ended 31 December

	<u>2018</u>	<u>2017</u>
Revenue	9,116	6,929,879
Profit	1,364,060	307,512
Other comprehensive income	243,706	549,474
Total comprehensive income	1,607,766	856,986

In May 2015, the Company received, at no cost, 490.64 million warrants to purchase 490.64 million newly issued ordinary shares (at a ratio of 1 warrant to 1 ordinary share), with an exercise price of Baht 6 per share. The warrants have a term of 5 years from the date they were issued and offered and can be exercised every 3 months, beginning on 30 September 2015 and with the final exercise date on 28 May 2020.

In addition, during the second quarter of the year 2018, the Company received dividend from the associate amounting to Baht 42 million (during the second quarter of the year 2017: Baht 112 million), in accordance with a resolution of the Annual General Meeting of the associate's shareholders held on 10 April 2018.

### 13. Other long-term investment

The Board of Director's meeting of Thai Water Operations Company Limited ("subsidiary") approved investment in mutual funds, and/or government and/or state enterprise and/or private sector debt securities, the subsidiary has made investments in debentures that management intend to hold to maturity and investments in real estate investment trust that management intend to investment in available-for-sale, as follows:

(Unit: Thousand Baht)

Consolidated  
financial statements

Debentures	Life	Maturity date	Interest rate	2018	2017
			(% per annum)		
1	3 years	28 October 2019	4.20	10,000	10,000
2	5 years	2 December 2021	4.50	5,000	5,000
3	5 years	6 October 2022	4.10	9,000	9,000
Total investments in debentures				24,000	24,000
<b>Investment in available-for-sale securities at fair value</b>					
Real estate investment trust				5,000	5,000
Less: Unrealised loss on changes in value of investments				(275)	-
Real estate investment trust - net				4,725	5,000
Total other long-term investments				28,725	29,000

## 14. Property, plant and equipment

(Unit: Thousand Baht)

	Consolidated financial statements					
	Land	Construction in progress	Building and building improvement	Furniture and office equipment	Motor vehicles	Tools
<b>Cost:</b>						
1 January 2017	707,161	142,770	58,236	134,745	25,028	25,501
Additions	-	414	3,467	9,137	365	594
Disposals/ written off	-	-	-	-	(484)	(10)
Reclassify	-	(142,411)	-	-	-	-
31 December 2017	707,161	773	61,703	143,882	24,909	26,085
Additions	-	2,707	7,941	11,069	41	1,130
Disposals/ written off	-	-	-	(3,274)	(2,199)	-
Transfer in (out)	-	(1,153)	1,153	-	-	-
Reclassify	100	1,290	1,688	1,318	-	-
31 December 2018	707,261	3,617	72,485	152,995	22,751	27,215
<b>Accumulated depreciation:</b>						
1 January 2017	-	-	20,561	110,363	23,525	22,950
Depreciation for the year	-	-	3,314	7,011	555	810
Depreciation on disposals/written off	-	-	-	-	(484)	(2)
31 December 2017	-	-	23,875	117,374	23,596	23,758
Depreciation for the year	-	-	4,724	8,456	563	920
Depreciation on disposals/written off	-	-	-	(3,245)	(2,199)	-
31 December 2018	-	-	28,599	122,585	21,960	24,678
<b>Net book value:</b>						
31 December 2017	707,161	773	37,828	26,508	1,313	2,327
31 December 2018	707,261	3,617	43,886	30,410	791	2,537
<b>Depreciation for the year</b>						
2017 (Baht 5 million included in cost of sales of treated water and service, and the balance in administrative expenses)						11,690
2018 (Baht 6 million included in cost of sales of treated water and service, and the balance in administrative expenses)						14,663

(Unit: Thousand Baht)

## Separate financial statements

	Land	Construction in progress	Building and building improvement	Furniture and office equipment	Motor vehicles	Tools	Total
<b>Cost:</b>							
1 January 2017	652,429	142,770	58,236	86,061	14,284	11,629	965,409
Additions	-	414	3,467	7,407	361	68	11,717
Disposals/ written off	-	(142,411)	-	-	-	-	(142,411)
31 December 2017	652,429	773	61,703	93,468	14,645	11,697	834,715
Additions	-	2,707	7,941	7,393	-	453	18,494
Reclassify	-	-	-	(2,681)	(2,158)	-	(4,839)
Transfer in (out)	-	(1,153)	1,153	-	-	-	-
Reclassify	100	1,290	1,688	1,318	-	-	4,396
31 December 2018	652,529	3,617	72,485	99,498	12,487	12,150	852,766
<b>Accumulated depreciation:</b>							
1 January 2017	-	-	20,561	65,631	13,334	10,718	110,244
Depreciation for the year	-	-	3,314	5,745	297	250	9,606
31 December 2017	-	-	23,875	71,376	13,631	10,968	119,850
Depreciation for the year	-	-	4,724	7,161	340	311	12,536
Depreciation for the year	-	-	-	(2,665)	(2,158)	-	(4,823)
31 December 2018	-	-	28,599	75,872	11,813	11,279	127,563
<b>Net book value:</b>							
31 December 2017	652,429	773	37,828	22,092	1,014	729	714,865
31 December 2018	652,529	3,617	43,886	23,626	674	871	725,203
<b>Depreciation for the year</b>							
2017 (Baht 4 million included in cost of sales of treated water and service, and the balance in administrative expenses)							9,606
2018 (Baht 5 million included in cost of sales of treated water and service, and the balance in administrative expenses)							12,536

As at 31 December 2018, certain items of plant and equipment were fully depreciated but are still in use. The gross carrying amount before deducting accumulated depreciation of those assets amounted to approximately Baht 160 million (Separate financial statements: Baht 92 million) (2017: Baht 155 million, Separate financial statements: Baht 91 million).

**15. Assets for production of treated water with public sector agency - assets that are owned by the Company**

(Unit: Thousand Baht)

	Consolidated/Separate financial statements		
	Water treatment plant and distribution treated water system	Construction in progress	Total
<b>Cost:</b>			
1 January 2017	11,726,699	2,195,306	13,922,005
Additions	312,746	98,256	411,002
Transfer in (out)	2,334,326	(2,334,326)	-
Capitalised interest	-	45,656	45,656
Reclassify	7,700	(596)	7,104
31 December 2017	14,381,471	4,296	14,385,767
Additions	-	31,403	31,403
Reclassify	(100)	(4,296)	(4,396)
31 December 2018	14,381,371	31,403	14,412,774
<b>Accumulated amortisation:</b>			
1 January 2017	3,961,774	-	3,961,774
Amortisation for the year	430,747	-	430,747
31 December 2017	4,392,521	-	4,392,521
Amortisation for the year	459,460	-	459,460
31 December 2018	4,851,981	-	4,851,981
<b>Net book value:</b>			
31 December 2017	9,988,950	4,296	9,993,246
31 December 2018	9,529,390	31,403	9,560,793
<b>Amortisation for the year</b>			
2017			430,747
2018			459,460

Amortisation of such assets for production of treated water has been included as part of cost of sales of treated water.

**16. Assets for production of treated water with public sector agency - assets that must be transferred at end of concession of subsidiary**

(Unit: Thousand Baht)

	Consolidated financial statements		
	Land	Water treatment plant and distribution treated water system	Total
<b>Cost:</b>			
1 January 2017	413,401	6,546,539	6,959,940
Additions	-	440	440
31 December 2017	413,401	6,546,979	6,960,380
Additions	-	1,370	1,370
31 December 2018	413,401	6,548,349	6,961,750
<b>Accumulated amortisation:</b>			
1 January 2017	297,597	4,102,280	4,399,877
Amortisation for the year	17,005	273,390	290,395
31 December 2017	314,602	4,375,670	4,690,272
Amortisation for the year	17,067	320,574	337,641
31 December 2018	331,669	4,696,244	5,027,913
<b>Net book value:</b>			
31 December 2017	98,799	2,171,309	2,270,108
31 December 2018	81,732	1,852,105	1,933,837
<b>Amortisation for the year</b>			
2017			290,395
2018			337,641

Amortisation of such assets for production of treated water has been included as part of cost of sales of treated water.

Assets for production of treated water of Pathum Thani Water Company Limited will be transferred to the Provincial Waterworks Authority after the end of the 25-year concession to produce and sell treated water.



## 17. Rights to produce and sell treated water and treat waste water from private sector agency

The net book value of rights to produce and sell treated water and treat waste water from private sector agency as at 31 December 2018 and 2017 is presented below.

(Unit: Thousand Baht)

	Consolidated / Separate financial statements			
	Rights	Machinery and equipment	Assets in process	Total
As at 31 December 2018:				
Cost	1,410,075	154,350	-	1,564,425
Less: Accumulated amortisation/depreciation	(365,914)	(10,397)	-	(376,311)
Net book value	<u>1,044,161</u>	<u>143,953</u>	<u>-</u>	<u>1,188,114</u>
As at 31 December 2017:				
Cost	1,410,075	146,921	3,828	1,560,824
Less: Accumulated amortization/depreciation	(318,937)	(3,879)	-	(322,816)
Net book value	<u>1,091,138</u>	<u>143,042</u>	<u>3,828</u>	<u>1,238,008</u>

A reconciliation of the net book of right to produce and sell treated water and treat waste water from private sector agency for the years 2018 and 2017 is presented below.

(Unit: Thousand Baht)

	Consolidated / Separate financial statements			
	Rights	Machinery and equipment	Assets in process	Total
Net book value as at 1 January 2017	1,137,734	-	-	1,137,734
Acquisitions at cost	-	12,116	3,828	15,944
Transfer from property, plant and equipment	-	134,711	-	134,711
Transfer from assets for production of treated water	-	94	-	94
Amortisation/depreciation for the year	(46,596)	(3,879)	-	(50,475)
Net book value as at 31 December 2017	<u>1,091,138</u>	<u>143,042</u>	<u>3,828</u>	<u>1,238,008</u>
Acquisitions at cost	-	3,601	-	3,601
Transfer from property, plant and equipment	-	3,828	(3,828)	-
Amortisation/depreciation for the year	(46,977)	(6,518)	-	(53,495)
Net book value as at 31 December 2018	<u>1,044,161</u>	<u>143,953</u>	<u>-</u>	<u>1,188,114</u>

During the current year, the Company had construction in progress to produce, sell treated water and treat waste water from private sector. These assets must be transferred to the owner of the rights after the end of the 30-year concession.

#### 18. Rights to produce and sell treated water from business acquisition

(Unit: Thousand Baht)		
Consolidated financial statements		
	<u>2018</u>	<u>2017</u>
Rights to produce and sell treated water from business acquisition	3,169,109	3,169,109
<u>Less:</u> Accumulated amortisation of rights to produce and sell treated water from business acquisition	(2,235,989)	(2,040,556)
Rights to produce and sell treated water from business acquisition, net	<u>933,120</u>	<u>1,128,553</u>

#### 19. Intangible assets

The net book value of intangible assets as at 31 December 2018 and 2017 is presented below.

(Unit: Thousand Baht)	
Consolidated financial statements	
As at 31 December 2018	
Cost	14,104
<u>Less</u> Accumulated amortisation	(11,220)
Net book value	<u>2,884</u>
As at 31 December 2017	
Cost	14,104
<u>Less</u> Accumulated amortisation	(10,059)
Net book value	<u>4,045</u>

A reconciliation of the net book value of intangible assets for the years 2018 and 2017 is presented below.

(Unit: Thousand Baht)		
Consolidated financial statements		
	<u>2018</u>	<u>2017</u>
Net book value at beginning of year	4,045	5,205
Amortisation	(1,161)	(1,160)
Net book value at end of year	<u>2,884</u>	<u>4,045</u>

## 20. Trade and other payables

	(Unit: Thousand Baht)			
	Consolidated		Separate	
	financial statements		financial statements	
	<u>2018</u>	<u>2017</u>	<u>2018</u>	<u>2017</u>
Trade payables - related party	583	100	3,845	3,257
Trade payables - unrelated parties	21,054	18,331	11,992	9,410
Amounts due to related parties	521	241	521	241
Amounts due to unrelated parties	19,450	14,788	14,895	12,268
Construction payable - related party	6,089	-	1,089	-
Construction payable - unrelated parties	143	143	143	143
Retention payable for contract work - related party	2,429	-	7,429	-
Retention payable for contract work - unrelated parties	5,550	4,004	4,841	3,593
Accounts payable from securities trading	-	8,536	-	8,536
Accrued expenses	78,500	81,698	50,341	50,867
Total trade and other payables	<u>134,139</u>	<u>127,841</u>	<u>95,096</u>	<u>88,315</u>

## 21. Long-term loans

			(Unit: Thousand Baht)	
			Consolidated / Separate	
			financial statements	
Loan	Interest rate (%)	Repayment schedule	2018	2017
1.	The 6-month and 12-month fixed deposit rate + a stipulated margin	Quarterly installments as from December 2009 to September 2019	135,000	315,000
2.	The 6-month fixed deposit rate + a stipulated margin	Repayment in full by 9 May 2020	2,760,000	2,760,000
3.	Fixed rate at 2.95% per annum	Quarterly installments as from March 2017 to December 2021	900,000	1,200,000
Total			3,795,000	4,275,000
Less: Current portion			(435,000)	(480,000)
Long-term loans, net of current portion			<u>3,360,000</u>	<u>3,795,000</u>

Movement of long-term loan account during the year ended 31 December 2018 are summarised below:

		(Unit: Thousand Baht)
		Consolidated/Separate
		Financial statements
Balance as at 1 January 2018		4,275,000
Less: Repayment		(480,000)
Balance as at 31 December 2018		<u>3,795,000</u>

## 22. Debentures

On 21 December 2017, a meeting of the Company's Board of Directors passed a resolution granting approval for the Company to issue Baht 1,000 million of unsecured senior debentures, with no trustees, in 1 series; to be offered for sale to investors in accordance with the Notification of the Securities and Exchange Commission. The Company issued this debenture on 1 February 2018 and matures on 1 February 2023.

The Company is required to maintain certain financial ratios i.e. debt to equity ratio, net debt to EBITDA and EBITDA to interest ratio at the rate prescribed.

## 23. Provision for long-term employee benefits

Provision for long-term employee benefits, which represents compensation payable to employees after they retire, was as follows:

	(Unit: Thousand Baht)			
	Consolidated		Separate	
	financial statements		financial statements	
	2018	2017	2018	2017
<b>Provision for long-term employee benefits</b>				
<b>at beginning of year</b>	40,253	34,651	21,319	17,895
Included in profit or loss:				
Current service cost	5,953	6,795	3,441	4,812
Interest cost	1,267	807	549	413
Past service costs and gains or losses on settlement	7,243	25	3,407	5
Included in other comprehensive income:				
Actuarial (gain) loss arising from				
Demographic assumptions changes	-	2,535	-	1,475
Financial assumptions changes	-	168	-	161
Experience adjustments	-	(2,798)	-	(2,663)
Benefits paid during the year	(356)	(1,930)	-	(779)
<b>Provision for long-term employee benefits</b>				
<b>at end of year</b>	54,360	40,253	28,716	21,319

Line items in profit or loss under which long-term employee benefit expenses are recognised as follows:

	(Unit: Thousand Baht)			
	Consolidated		Separate	
	financial statements		financial statements	
	2018	2017	2018	2017
Cost of sales of treated water and service	7,778	2,414	1,900	535
Administrative expenses	6,685	5,213	5,497	4,695
Total expenses recognised in profit or loss	14,463	7,627	7,397	5,230

The Company and its subsidiaries expect to pay Baht 7 million of long-term employee benefits during the next year (Separate financial statements: Baht 3 million) (2017: Baht 2 million, Separate financial statements: Baht 2 million).

As at 31 December 2018 and 2017, the weighted average duration of the liabilities for long-term employee benefits is 8.17 - 10.05 years (Separate financial statements: 8.17 years).

Significant actuarial assumptions are summarised below:

	Consolidated financial statements		Separate financial statements	
	2018	2017	2018	2017
	(% per annum)	(% per annum)	(% per annum)	(% per annum)
Discount rate	2.22 - 2.38	2.22 - 2.38	2.22	2.22
Salary increase rate	5.0	5.0	5.0	5.0
Turnover rate	0 - 14.0	0 - 14.0	0 - 13.0	0 - 13.0

The result of sensitivity analysis for significant assumptions that affect the present value of the long-term employee benefit obligation as at 31 December 2018 and 2017 are summarised below:

(Unit: Thousand Baht)

As at 31 December 2018

	Consolidated financial statements		Separate financial statements	
	Increase 1%	Decrease 1%	Increase 1%	Decrease 1%
Discount rate	(3,980)	4,602	(1,864)	2,132
Salary increase rate	4,972	(4,382)	2,328	(2,072)
Turnover rate	(268)	2,897	(1,977)	1,299

(Unit: Thousand Baht)

As at 31 December 2017

	Consolidated financial statements		Separate financial statements	
	Increase 1%	Decrease 1%	Increase 1%	Decrease 1%
Discount rate	(2,820)	3,262	(1,334)	1,526
Salary increase rate	3,140	(2,777)	1,467	(1,312)
Turnover rate	(2,993)	2,067	(1,415)	932

On 13 December 2018, The National Legislative Assembly passed a resolution approving the draft of a new Labour Protection Act, which is in the process being published in the Royal Gazette. The new Labour Protection Act stipulates additional legal severance pay rates for employees who have worked for an uninterrupted period of twenty years or more. Such employees are entitled to receive not less than 400 days' compensation at the latest wage rate. This change is considered a post-employment benefits plan amendment and the Company and its subsidiaries have additional liabilities for long-term employee benefits. The Company and its subsidiaries have recorded the effect of the change by recognising past services costs as expenses in the income statement.

## 24. Statutory reserve

Pursuant to Section 116 of the Public Limited Companies Act B.E. 2535, the Company is required to set aside to a statutory reserve at least 5% of its net profit after deducting accumulated deficit brought forward (if any), until the reserve reaches 10% of the registered capital. The statutory reserve is not available for dividend distribution. At present, the statutory reserve has fully been set aside.

## 25. Other reserve

According to the amendment of the concession to operate treated water dated 20 March 2008, prior to paying a dividend the Company is required to set aside 10% of its annual net profit to other reserve.

However, according to the additional amendment of the agreement to the concession to operate treated water dated 28 October 2016, amendment the articles above to prior to paying a dividend from net profit the Company is required to set aside 10% of its full registered share capital to the legal reserve.

Retained earnings set aside as the legal reserve are to be retained in cash and deposited at a bank or financial institution licensed by the Bank of Thailand.

## 26. Expenses by nature

Significant expenses classified by nature are as follows:

	(Unit: Thousand Baht)			
	Consolidated		Separate	
	financial statements		financial statements	
	<u>2018</u>	<u>2017</u>	<u>2018</u>	<u>2017</u>
Salaries, wages and other employee benefits	183,584	192,143	92,384	103,130
Depreciation and amortisation	475,284	443,595	471,995	440,352
Amortisation of assets for production of treated water that must be transferred at end of concession	337,641	290,395	-	-
Amortisation of investments in subsidiaries	-	-	221,494	221,494
Operating and maintenance expenses	-	-	36,444	35,569
Production and maintenance cost	750,061	680,081	441,784	387,818



## 27. Income tax

Income tax expenses for the years ended 31 December 2018 and 2017 are made up as follows:

	(Unit: Thousand Baht)			
	Consolidated		Separate	
	financial statements		financial statements	
	<u>2018</u>	<u>2017</u>	<u>2018</u>	<u>2017</u>
<b>Current income tax:</b>				
Current income tax charge	629,529	603,326	457,926	450,332
<b>Deferred tax:</b>				
Relating to origination and reversal of temporary differences	(13,437)	28,895	(7,605)	19,491
<b>Income tax expenses reported in the statement of comprehensive income</b>	<u>616,092</u>	<u>632,221</u>	<u>450,321</u>	<u>469,823</u>

The amounts of income tax relating to each component of other comprehensive income for the years ended 31 December 2018 and 2017 are as follows:

	(Unit: Thousand Baht)			
	Consolidated		Separate	
	financial statements		financial statements	
	<u>2018</u>	<u>2017</u>	<u>2018</u>	<u>2017</u>
Deferred tax on actuarial gain (loss)	-	(671)	-	205
Deferred tax on gain from the change in value of available-for-sale investments	117	1,000	-	-
Deferred tax on unrealised gain from cash flow hedges	9,419	17,919	-	-
	<u>9,536</u>	<u>18,248</u>	<u>-</u>	<u>205</u>

The reconciliation between accounting profit and income tax expenses is shown below.

	(Unit: Thousand Baht)			
	Consolidated		Separate	
	financial statements		financial statements	
	<u>2018</u>	<u>2017</u>	<u>2018</u>	<u>2017</u>
Accounting profit before tax	<u>3,476,995</u>	<u>3,312,973</u>	<u>3,116,953</u>	<u>3,169,324</u>
Applicable tax rate	20%	20%	20%	20%
Accounting profit before tax multiplied by income tax rate	695,399	662,595	623,391	633,865
Effects of:				
Promotional privileges (Note 28)	(87,230)	(78,069)	(34,120)	(31,523)
Non-deductible expenses	54,112	49,125	50,780	46,048
Additional expense deductions allowed	(1,801)	(1,853)	(1,611)	(1,663)
Exemption of income	-	-	(185,803)	(192,422)
Effect of elimination entry on the consolidated financial statements	(38,459)	(16,161)	-	-
Others	(5,929)	16,584	(2,316)	15,518
Total	<u>(79,307)</u>	<u>(30,374)</u>	<u>(173,070)</u>	<u>(164,042)</u>
Income tax expenses reported in the statement of comprehensive income	<u>616,092</u>	<u>632,221</u>	<u>450,321</u>	<u>469,823</u>

The components of deferred tax assets and deferred tax liabilities are as follows:

	(Unit: Thousand Baht)			
	Statements of financial position as at 31 December			
	Consolidated		Separate	
	financial statements		financial statements	
	<u>2018</u>	<u>2017</u>	<u>2018</u>	<u>2017</u>
<b>Deferred tax assets</b>				
Provision for long-term employee benefits	10,872	8,051	5,743	4,264
Allowance for doubtful accounts	4,025	2,013	2,244	1,122
Unrealised loss from revaluation of on available-for-sale interest	55	-	-	-
Total	<u>14,952</u>	<u>10,064</u>	<u>7,987</u>	<u>5,386</u>
<b>Deferred tax liabilities</b>				
Accumulated amortisation - assets for production of treated water	(74,968)	(79,861)	(74,968)	(79,861)
Accumulated amortisation of rights to produce and sell treated water and treat waste water	(15,199)	(15,218)	(15,199)	(15,218)
Accumulated amortisation - assets for production of treated water that must be transferred at end of concession of subsidiary	(25,210)	(27,860)	-	-
Deferred debenture issuing costs	(801)	(893)	(801)	(893)
Fair value adjustment of assets for production of treated water that must be transferred at end of concession regarding business combination	(4,105)	(5,056)	-	-
Total	<u>(120,283)</u>	<u>(128,888)</u>	<u>(90,968)</u>	<u>(95,972)</u>
Net	<u>(105,331)</u>	<u>(118,824)</u>	<u>(82,981)</u>	<u>(90,586)</u>

## 28. Promotional privileges

The Company received promotional privileges from the Board of Investment for production of treated water, pursuant to the investment promotion certificate No. 2437(2)/2553 issued on 13 September 2010. Subject to certain imposed conditions, the main privileges include the following:

- Exemption from import duty on imported machinery under specified conditions.
- Exemption from corporate income tax on net profit from the promoted operations for a period of eight years from the date the promoted operations begin generating revenues (30 September 2010).

During the year 2013, the Company received promotional privileges from the Board of Investment to restore investment after the floods, pursuant to the promotion certificate No. 5177(2)/2556 issued on 27 May 2013 (replacing earlier promotion certificate No. 1382(2)/2545 which expired in 2012). Subject to certain imposed conditions, the main privileges include the following:

- Exemption from import duty on imported machinery under specified conditions.
- Exemption from corporate income tax on net profit from the promoted operations, with the amount of tax exempted capped at 150% of investment, excluding land and working capital, only the repair expenses of machinery and equipment damaged due to flooding, for a period of eight years from the date the promoted operations begin generating revenues (30 June 2013).

During the year 2017, the Company received promotional privileges from the Board of Investment for production of treated water, pursuant to the investment promotion certificate No. 59-0683-1-00-1-0 issued on 29 February 2017. Subject to certain imposed conditions, the main privileges include the following:

- Exemption from import duty on imported machinery under specified conditions.
- Exemption from corporate income tax on net profit from the promoted operations for a period of five years from the date the promoted operations begin generating revenues (Not yet utilised).

The Company's operating revenues for the years ended 31 December 2018 and 2017, divided between promoted and non-promoted operations, are summarised below.

	(Unit: Thousand Baht)					
	Promoted operations		Non-promoted operations		Total	
	<u>2018</u>	<u>2017</u>	<u>2018</u>	<u>2017</u>	<u>2018</u>	<u>2017</u>
Sales of treated water	345,495	349,729	3,629,040	3,421,785	3,974,535	3,771,514

## **29. Basic earnings per share**

Basic earnings per share is calculated by dividing profit for the year attributable to equity holders of the Company (excluding other comprehensive income) by the weighted average number of ordinary shares in issue during the year.

## **30. Segment information**

Operating segment information is reported in a manner consistent with the internal reports that are regularly reviewed by the chief operating decision maker in order to make decisions about the allocation of resources to the segment and assess its performance.

The Company and the subsidiaries are principally engaged in the production and sell of treated water. Its operations are carried on only in Thailand. Segment performance is measured based on operating profit or loss, on a basis consistent with that used to measure operating profit or loss in the financial statements. As a result, all of the revenues, operating profits and assets as reflected in these financial statements pertain to the aforementioned reportable operating segment and geographic area.

### **Geographic information**

The Company and its subsidiaries operate in Thailand only. As a result, all the revenues and assets as reflected in these financial statements pertain exclusively to this geographical reportable segment.

### **Major customer**

For the year 2018, the Company and its subsidiaries have revenue from a major customer in amount of Baht 5,596 million (2017: Baht 5,268 million) accounted for 94% of total revenues of the Company and its subsidiaries.

## **31. Provident fund**

The Company, its subsidiaries and their employees have established provident funds jointly with their employees in accordance with the Provident Fund Act B.E. 2530. The Company, the subsidiaries and their employees contribute to the funds monthly at the rates of 5.0 - 15.0% (2017: 5.0 - 7.5%) of basic salary. The funds, which are managed by Kasikorn Asset Management Company Limited, will be paid to employees upon termination in accordance with the fund rules. The contributions for the year 2018 amounting to approximately Baht 8 million (Separate financial statements: Baht 4 million) (2017: Baht 7 million, Separate financial statements: Baht 4 million) were recognised as expenses.

## 32. Dividend paid

<u>Dividends</u>	<u>Approved by</u>	<u>Total dividends</u> (Thousand Baht)	<u>Dividend per share</u> (Baht)
Dividends from the earnings of the promoted operations for July to December 2016	Annual General Meeting of the shareholders on 18 April 2017	51,865	0.013
Dividends from the earnings of the non-promoted operations for July to December 2016	Annual General Meeting of the shareholders on 18 April 2017	1,145,015	0.287
Interim dividends from the earnings of the promoted operations for January to June 2017	Board of Directors' meeting on 14 August 2017	63,840	0.016
Interim dividends from the earnings of the non-promoted operations for January to June 2017	Board of Directors' meeting on 14 August 2017	1,133,158	0.284
Total dividends for 2017		<u>2,393,878</u>	<u>0.600</u>
Dividends from the earnings of the promoted operations for July to December 2017	Annual General Meeting of the shareholders on 19 April 2018	91,770	0.023
Dividends from the earnings of the non-promoted operations for July to December 2017	Annual General Meeting of the shareholders on 19 April 2018	1,105,230	0.277
Interim dividends from the earnings of the promoted operations for January to June 2018	Board of Directors' meeting on 16 August 2018	107,730	0.027
Interim dividends from the earnings of the non-promoted operations for January to June 2018	Board of Directors' meeting on 16 August 2018	1,089,270	0.273
Total dividends for 2018		<u>2,394,000</u>	<u>0.600</u>

### 33. Commitments and contingent liabilities

#### 33.1 Capital commitments

As at 31 December 2018, the Company had capital commitments of Baht 19 million relating to the improvement project on water supply systems at Bang Len water supply plant (2017: Baht 6 million relating to magnetic flow chamber construction in Mahachai pumping station and installation of fire protection system at Bang Len water supply plant).

#### 33.2 Service commitments and other commitments

- a) The Company has entered into operation and maintenance agreements with Thai Water Operations Company Limited (“the subsidiary”), whereby the subsidiary is to manage and maintenance of production and supply of treated water system and to manage the waste water treatment system. Under the conditions of the agreements, the Company is to pay service fees at a rate stipulated in the agreements, which have an initial term of 1 year from 8 January 2010 and thereafter automatically renews each year for a further period of 1 year.
- b) As at 31 December 2018, the Company and its subsidiaries had commitments totaling Baht 37 million (Separate financial statements: Baht 25 million) (2017: Baht 12 million (Separate financial statement: Baht 3 million)) under other service agreements.

#### 33.3 Operating lease commitments

The Company has entered into vehicles and land lease agreements for office building. The term of the land lease agreement is between 1 March 2010 and 31 August 2048.

Future minimum lease payments required under this non-cancellable operating lease contract were as follows:

	(Unit: Thousand Baht)	
	Consolidated/Separate financial statements	
	2018	2017
Payable:		
In up to 1 year	8,605	7,637
In over 1 and up to 5 years	17,202	17,087
In over 5 years	31,955	33,679

### 33.4 Bank guarantees

As at 31 December 2018, there were outstanding bank guarantees of Baht 311 million (Separate financial statements: Baht 122 million) (2017: Baht 307 million (Separate financial statements: Baht 120 million)) issued by banks on behalf of the Company and its subsidiaries in respect of certain performance bonds as required in the normal course of business. These included letters of guarantee as follows:

	(Unit: Thousand Baht)			
	Consolidated		Separate	
	financial statements		financial statements	
	2018	2017	2018	2017
Guarantee under the Water Purchase Agreement				
with the Provincial Waterworks Authority	230,400	228,300	62,900	62,000
Guarantee electricity use	67,733	65,732	46,048	44,984
Guarantee for others	13,101	13,101	13,101	13,101
Total	311,234	307,133	122,049	120,085

### 34. Fair value hierarchy

As of 31 December 2018 and 2017, the Company and its subsidiaries had the assets and liabilities that were measured or disclosed at fair value using different levels of inputs as follows:

	(Unit: Thousand Baht)			
	Consolidated financial statements			
	As at 31 December 2018			
	Level 1	Level 2	Level 3	Total
<b>Financial assets measured at fair value</b>				
Held for trade investments				
Equity instruments	85,654	-	-	85,654
Debt instruments	-	2,699,011	-	2,699,011
Other long-term investment - real estate				
investment trust	4,725	-	-	4,725
<b>Asset for which fair value are disclosed</b>				
Investment in associate	9,253,596	-	-	9,253,596
Other long-term investment - debentures	-	24,009	-	24,009
<b>Liability for which fair value are disclosed</b>				
Debentures	-	6,547,931	-	6,547,931

(Unit: Thousand Baht)

## Consolidated financial statements

As at 31 December 2017

	Level 1	Level 2	Level 3	Total
<b>Financial assets measured at fair value</b>				
Held for trade investments				
Equity instruments	235,849	-	-	235,849
Debt instruments	-	1,588,445	-	1,588,445
Other long-term investment - real estate investment trust	5,000	-	-	5,000
<b>Asset for which fair value are disclosed</b>				
Investment in associate	7,537,203	-	-	7,537,203
Other long-term investment - debentures	-	24,128	-	24,128
<b>Liability for which fair value are disclosed</b>				
Debentures	-	6,787,405	-	6,787,405

(Unit: Thousand Baht)

## Separate financial statements

As at 31 December 2018

	Level 1	Level 2	Level 3	Total
<b>Financial assets measured at fair value</b>				
Held for trade investments				
Equity instruments	85,654	-	-	85,654
Debt instruments	-	2,285,894	-	2,285,894
<b>Asset for which fair value are disclosed</b>				
Investment in associate	9,253,596	-	-	9,253,596
<b>Liability for which fair value are disclosed</b>				
Debentures	-	6,547,931	-	6,547,931

(Unit: Thousand Baht)

## Separate financial statements

As at 31 December 2017

	Level 1	Level 2	Level 3	Total
<b>Financial assets measured at fair value</b>				
Held for trade investments				
Equity instruments	235,849	-	-	235,849
Debt instruments	-	1,103,687	-	1,103,687
<b>Asset for which fair value are disclosed</b>				
Investment in associate	7,537,203	-	-	7,537,203
<b>Liability for which fair value are disclosed</b>				
Debentures	-	6,787,405	-	6,787,405



## **35. Financial instruments**

### **35.1 Financial risk management**

The Company's and its subsidiaries' financial instruments, as defined under Thai Accounting Standard No. 107 "Financial Instruments: Disclosure and Presentations", principally comprise cash and cash equivalents, current investments, trade and other receivables, other long-term investments, long-term loans to related party, trade and other payables, long-term loans and debentures. The financial risks associated with these financial instruments and how they are managed is described below.

#### ***Credit risk***

The Company and its subsidiary are exposed to credit risk primarily with respect to trade accounts receivable and other receivables and there is a high concentration of risk since the Company and its subsidiary have only one major customer, the Provincial Waterworks Authority. However, because the Provincial Waterworks Authority is a government agency, the Company and its subsidiary do not expect to incur material financial losses. The maximum exposure to credit risk is limited to the carrying amounts of receivables as stated in the statement of financial position.

#### ***Interest rate risk***

The Company's and its subsidiaries' exposures to interest rate risk relate primarily to their cash at banks, current investments, long-term loans to related party, long-term loans and debentures. However, since most of the Company's and the subsidiaries' financial assets and liabilities bear floating interest rates or fixed interest rates which are close to the market rate, the interest rate risk is expected to be minimal.

Significant financial assets and liabilities classified by type of interest rates are summarised in the table below, with those financial assets and liabilities that carry fixed interest rates further classified based on the maturity date, or the repricing date if this occurs before the maturity date.

(Unit: Thousand Baht)

As at 31 December 2018

Consolidated financial statements						
Fixed interest rates			Floating			
Within	1-5	Over	interest	Non-interest		Effective
1 year	years	5 years	rate	bearing	Total	interest rate
						(% per annum)
2	-	-	67,514	31,826	99,342	0.05 - 0.50
3,414,227	-	-	-	85,654	3,499,881	0.650 - 1.853
-	-	-	-	564,548	564,548	-
10,000	14,000	-	-	4,725	28,725	4.10 - 4.50
3,424,229	14,000	-	67,514	686,753	4,192,496	
-	-	-	-	134,319	134,319	-
-	-	-	3,795,000	-	3,795,000	2.75 - 3.10
1,500,026	3,497,550	1,398,219	-	-	6,395,795	2.33 - 4.60
1,500,026	3,497,550	1,398,219	3,795,000	134,319	10,325,114	

(Unit: Thousand Baht)

As at 31 December 2017

Consolidated financial statements						
Fixed interest rates			Floating			
Within 1 year	1-5 years	Over 5 years	interest rate	Non-interest bearing	Total	Effective interest rate
						(% per annum)
2	-	-	284,626	32,180	316,808	0.05 - 0.50
2,123,622	-	-	-	235,848	2,359,470	0.65 - 4.38
-	-	-	-	553,314	553,314	-
-	24,000	-	-	5,000	29,000	4.10 - 4.50
2,123,624	24,000	-	284,626	826,342	3,258,592	
-	-	-	-	127,841	127,841	-
-	-	-	4,275,000	-	4,275,000	2.75 - 3.10
999,978	3,997,172	1,397,968	-	-	6,395,118	3.06 - 4.60
999,978	3,997,172	1,397,968	4,275,00	127,841	10,797,959	

(Unit: Thousand Baht)

As at 31 December 2018

	Separate financial statements						
	Fixed interest rates			Floating		Total	Effective interest rate (% per annum)
	Within 1 year	1-5 years	Over 5 years	interest rate	Non-interest bearing		
<b>Financial assets</b>							
Cash and cash equivalents	2	-	-	61,064	31,371	92,437	0.05 - 0.50
Current investments	2,741,110	-	-	-	85,654	2,826,764	0.650 - 1.625
Trade and other receivables	-	-	-	-	394,436	394,436	-
Long-term loans to related party	-	-	-	461,297	-	461,297	4.25 - 4.40
	<u>2,741,112</u>	<u>-</u>	<u>-</u>	<u>522,361</u>	<u>511,461</u>	<u>3,774,934</u>	
<b>Financial liabilities</b>							
Trade and other payables	-	-	-	-	95,096	95,096	-
Long-term loans	-	-	-	3,795,000	-	3,795,000	2.75 - 3.10
Debentures	1,500,026	3,497,550	1,398,219	-	-	6,395,795	2.33 - 4.60
	<u>1,500,026</u>	<u>3,497,550</u>	<u>1,398,219</u>	<u>3,795,000</u>	<u>95,096</u>	<u>10,285,891</u>	

(Unit: Thousand Baht)

As at 31 December 2017

	Separate financial statements						
	Fixed interest rates			Floating		Total	Effective interest rate (% per annum)
	Within 1 year	1-5 years	Over 5 years	interest rate	Non-interest bearing		
<b>Financial assets</b>							
Cash and cash equivalents	2	-	-	249,211	31,702	280,915	0.05 - 0.50
Current investments	1,508,864	-	-	-	235,848	1,744,712	0.65 - 4.38
Trade and other receivables	-	-	-	-	380,288	380,288	-
Long-term loans to related party	-	-	-	828,513	-	828,513	4.25 - 4.40
	<u>1,508,866</u>	<u>-</u>	<u>-</u>	<u>1,077,724</u>	<u>647,838</u>	<u>3,234,428</u>	
<b>Financial liabilities</b>							
Trade and other payables	-	-	-	-	88,315	88,315	-
Long-term loans	-	-	-	4,275,000	-	4,275,000	2.75 - 3.10
Debentures	999,978	3,997,172	1,397,968	-	-	6,395,118	3.06 - 4.60
	<u>999,978</u>	<u>3,997,172</u>	<u>1,397,968</u>	<u>4,275,000</u>	<u>88,315</u>	<u>10,758,433</u>	

### Foreign currency risk

The Company and its subsidiaries do not consider themselves exposed to foreign currency risk because they have no significant foreign currency transactions.

## 35.2 Fair values of financial instruments

Since the majority of the Company's and the subsidiaries' financial instruments are short-term in nature or carrying interest at rates close to market interest rates, their fair value is not expected to be materially different from the amounts presented in the statement of financial position.

The estimated fair value of financial instruments, in comparison with the related amounts carried in the statement of financial position, is as follows:

	(Unit: Million Baht)			
	As at 31 December 2018		As at 31 December 2017	
	Carrying amount	Fair value	Carrying amount	Fair value
<b>Financial liabilities</b>				
Debentures	6,396	6,548	6,395	6,787

The methods and assumptions used by the Company in estimating the fair value of financial instruments are as follows:

- a) For fixed rate debentures, their fair value is estimated by discounting expected future cash flow by the current market interest rate of the loans with similar terms and conditions.

During the years, there were no transfers within the fair value hierarchy.

## 36. Capital management

The primary objective of the Company's capital management is to ensure that it has appropriate capital structure in order to support its business and maximise shareholder value. As at 31 December 2018, the Group's debt-to-equity ratio was 0.89:1 (2017: 0.96:1) and the Company's was 0.99:1 (2017: 1.06:1).

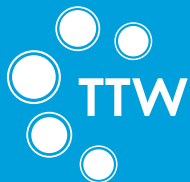
## 37. Events after the reporting period

On 26 February 2019, a meeting of the Company's Board of Directors passed a resolutions to propose a dividend payment for the year 2018 of Baht 0.60 per share, of which Baht 0.30 per share was paid as an interim dividend and the remaining dividend payment will be Baht 0.30 per share. Dividend payment is subject to the approval of shareholders.

## 38. Approval of financial statements

These financial statements were authorised for issue by the Company's Board of Directors on 26 February 2019.





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