



TRANSFORMATIONAL LEADERSHIP FOR SUSTAINABILITY

WHA UTILITIES AND POWER PUBLIC COMPANY LIMITED
ANNUAL REGISTRATION STATEMENT / ANNUAL REPORT 2022 (FORM 56-1 ONE REPORT)

TRANSFORMATIONAL **LEADERSHIP FOR SUSTAINABILITY**

WHA UTILITIES AND POWER PUBLIC COMPANY LIMITED

Annual Registration Statement / Annual Report 2022

(Form 56-1 One Report)





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VISION

To be Asia's leader in utilities and power businesses providing total solutions to partners with good corporate governance as well as environmentally and socially friendly operations.

MISSION

1. To develop world class utilities and power solutions fitting customers' needs.
2. To vertically integrate solutions in utilities and power businesses and expand other market segment to increase products and services in Thailand and other Southeast Asia Countries.
3. To continuously develop human resources competencies to build talent and experience to enhance organizational core competency including encouraging workplace environment for employee wellbeing.
4. To nurture an innovative culture in the organization.
5. To add value to communities and the environment with good corporate governance and sustainable development strategies.

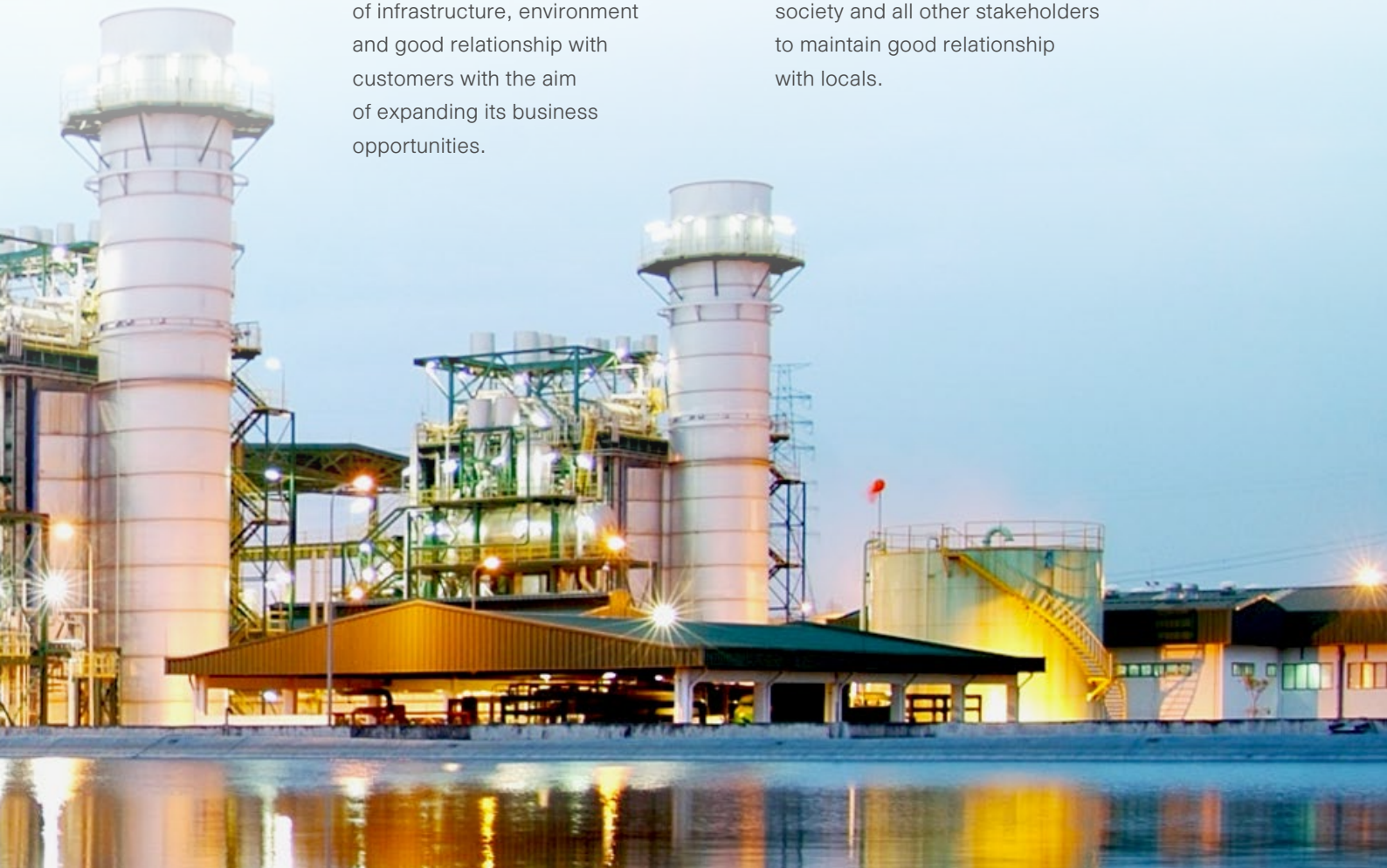


GOALS

The Company aims to be a leader in integrated utility and power businesses and to operate in compliance with the principles of good corporate governance with responsibility for the community, society and the environment. It also plans to expand its customer base in the segments of utilities and power services, both domestically and in the South East Asia countries and expand to related businesses in order to widen its range of products and services.

STRATEGY

1. Continuously improving its utility business and power business to ensure the constant and predictable generation of income, maximise profit and add value to shareholders.
2. Applying its expertise in management in respect of infrastructure, environment and good relationship with customers with the aim of expanding its business opportunities.
3. Efficiently using its human resources and financial assets to create the prospects of business investment.
4. Incessantly carrying out educational, community and environmental campaigns for the benefit of the community, society and all other stakeholders to maintain good relationship with locals.





FINANCIAL HIGHLIGHT

(million Baht)

PROFIT AND LOSS	2022	2021	2020
Revenue from Sales and Services	2,443.0	2,180.8	1,698.0
Cost of Sales and Services ¹	(1,660.9)	(1,476.2)	(1,198.1)
Gross Profit	782.1	704.6	499.8
Share of Profit from Investments in Associates and Joint Ventures	155.9	317.3	866.3
Net Profit Attributable to Owners of the Parent	454.1	735.5	812.7
Normalized Net Income ²	448.0	866.4	779.8

(million Baht)

BALANCE SHEET	2022	2021	2020
Total Assets	27,645.4	25,838.8	26,171.6
Total Liabilities	15,024.0	13,454.9	14,014.5
Total Equity	12,621.4	12,383.9	12,157.1

(million Baht)

FINANCIAL RATIO	2022	2021	2020
Gross Profit Margin (%)	32.0%	32.3%	29.4%
Net Profit Margin ³ (%)	16.1%	25.5%	30.7%
Return on Equity ⁴ (%)	3.6%	6.0%	6.3%
Debt/Equity Ratio (times)	1.19x	1.09x	1.15x
Net Interest-bearing Debt ⁵ /Equity Ratio ⁵ (times)	1.01x	0.90x	0.91x

¹ Cost of sales and services is calculated by cost of sales, cost of services, depreciation and amortization

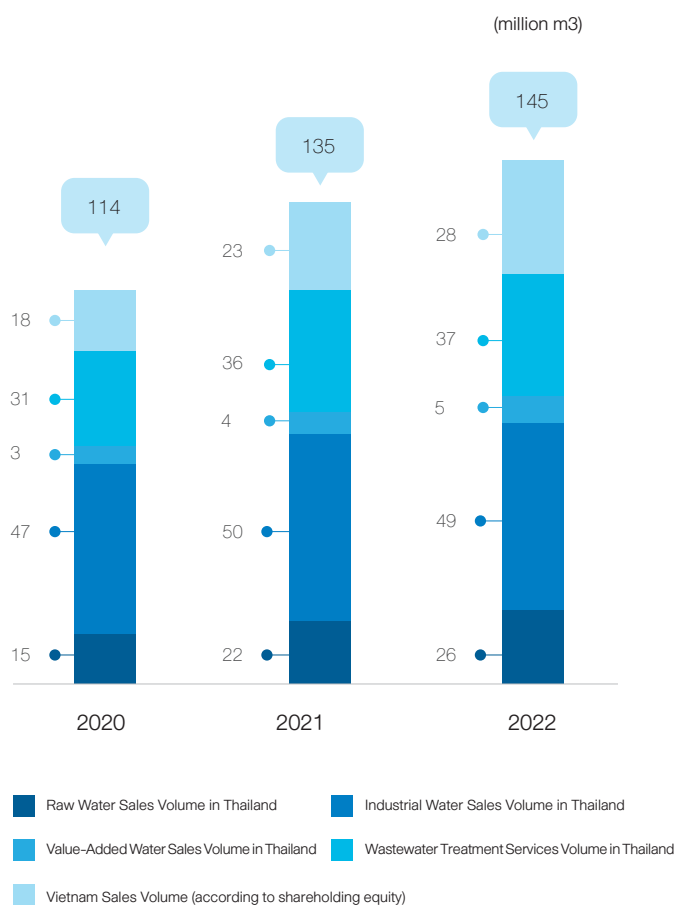
² Normalized Net Income is Net Profit attributable to Owners of the Parent excluding Foreign Exchange Gain/Loss and related tax

³ Net profit margin is calculated by dividing the Net Profit attributable to Owners of the Parent by Revenue from Sales and Services and Share of Profit from Investments in Associates and Joint Ventures and other income

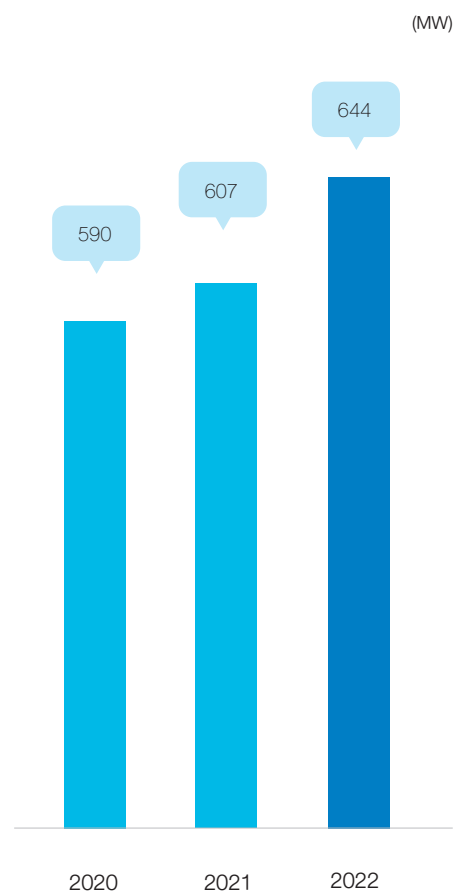
⁴ Return on Equity is calculated by dividing the Net Profit attributable to Owners of the Parent by average Total Equity

⁵ Interest-bearing Debt excludes Interest-bearing Debt from Lease Liabilities

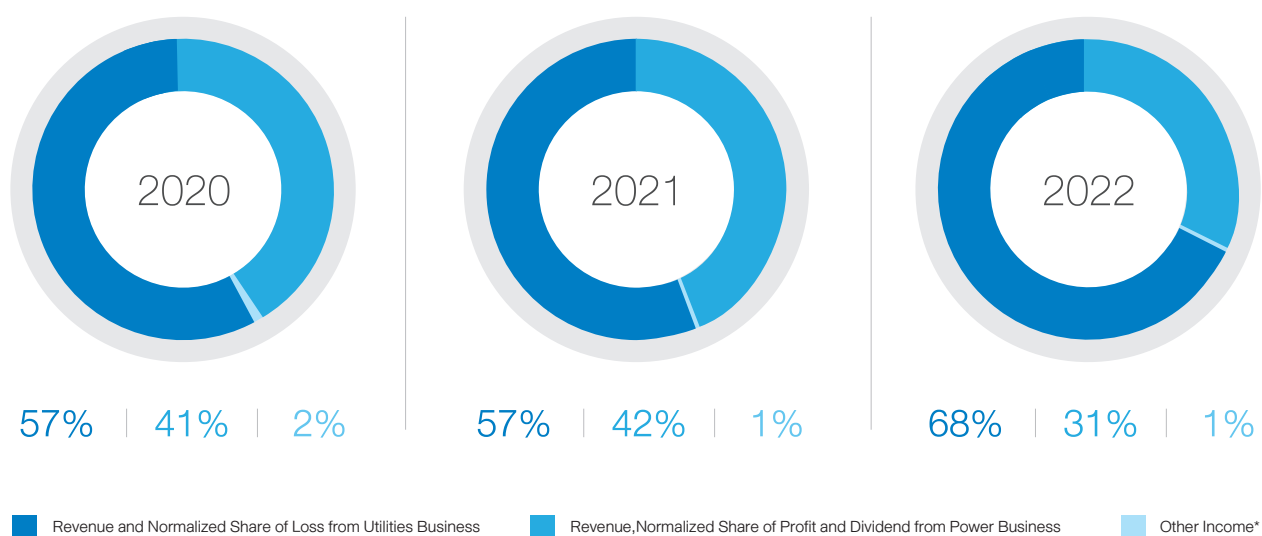
Total Sales & Management Volume



Installed Power Capacity



Revenue Structure



Note

* Other Incomes such as interest income and guarantee fee





MESSAGE FROM THE CHAIRMAN OF THE BOARD OF DIRECTORS

To Shareholders

The year 2022 was another challenging year for business operations due to the Ukraine-Russia conflict crisis, which led to soaring energy prices. However, despite the energy price crisis and economic slowdown, the Company maintained strong growth and strived to develop innovative and technologically advanced utilities and power services that have a positive impact on the economy, society, and environment to promote sustainable development and benefits for all stakeholders.

The Company will align its strategy and goal with that of the WHA Group to achieve mutual benefits (synergy) and transform into a technology company by 2024 with the Mission to the Sun strategy. This strategy aims to develop in all aspects and place customer needs at the center of how new technologies are employed, including developing its employees to be an agile organization and strengthening the internal system to be prepared for new business opportunities and needs from the WHA Group.

The year 2022 was a favorable year for the WHA Group due to the return of international investors to industrial development land investments and employment. This contributed to the growth of Thailand's Gross Domestic Product (GDP), which was of great benefit to the Company. The signing of additional contracts to supply raw water and wastewater management services to industrial estate customers was the primary driver. Moreover, the Company had more opportunities to provide customers with high-value products, as customers tended to seek more high-quality water to satisfy ESG requirements. In terms of energy development, the Company remained committed to the development of clean energy.

In addition, the Company won the Stock Exchange of Thailand's 2022 Best Innovative Company Award for its Peer-to-Peer Energy trading project, a smart blockchain-based solar power trading platform for customers within WHA industrial estates. This project is an innovative development that benefits power purchasers and sellers, the environment, and society, as well as promoting the government's policy of reducing greenhouse gas emissions and supporting the Company's goal of achieving Net Zero Greenhouse Gas Emissions by 2050.

In the past year, oil and natural gas prices had an impact on the Company's power business; as a result, the increase in the electricity price has not kept pace with the fluctuating cost increases. However, through prudent management of its investment portfolio, the business continues to generate reasonable profits. It is expected that when energy price volatility improves, the performance of the fossil fuel business will improve in the long term.

In addition to being determined to run the business utilizing diverse technologies and innovations, the Company focused on sustainable growth that took stakeholders, society, the environment, and corporate governance into account. As a result, the Company was included in the list of sustainable stocks, or Thailand Sustainability Investment : THSI for the year 2022, by the Stock Exchange of Thailand for the third consecutive year and was evaluated at the "Excellent" level by the Corporate Governance Report of Thai Listed Companies : CGR for the year 2022 by the Thai Institute of Directors Association for the fourth consecutive year. This reflected the integrity of transparency and good governance in its operation all along.

Lastly, on behalf of the Board of Directors of WHA Utilities and Power Public Company Limited, I would like to thank shareholders, customers, employees, and all stakeholders for their continued support and trust in the Company. These are the forces that drive the Company to become a leader in the integrated utility and power business, while maintaining good corporate governance and being responsible to the community, society, and environment, in accordance with the Company's vision

Ms. Jareeporn Jarukornsakul

Chairman of the Board of Directors





MESSAGE FROM CEO

Even though the economy has started to recover from the COVID-19 crisis over the past year, the recovery has been slowed by rising energy prices caused by international conflicts. Notwithstanding this, the Company maintained robust growth over the past year thanks to its commitment to sustainable growth, the ongoing development of operational strategies, technology, and innovation.

For an overview of the utilities business, the Company's domestic and international water sales and management volume in 2022 was 145 million cubic meters, increasing by 8% from the previous year. The main reason was that more foreign investors bought land in WHA Group's industrial estates. These investors were in various industries, including electric vehicles, food, and renewable energy. As these industries have a high demand for water and wastewater management, the Company can secure additional contracts from these investors to manage water and wastewater. Moreover, increasing demands on Environment, Social, and Governance (ESG) have prompted many customers to demand more renewable energy and higher-quality water. This creates new opportunities for the Company's power and water businesses to find new solutions. In the water business, the total volume of water sold and managed in Thailand and Vietnam in 2022 was 117 million cubic meters and 28 million cubic meters, respectively. The Company's strategy is to develop a comprehensive range of utility innovations, particularly value-added water products, to meet customer needs while also remaining committed to the development of alternative raw water sources and the expansion of reclaimed water product production or wastewater retreatment. This means that, in addition to using less water from the original source, treated water can be used to produce value-added water for sale. The Company has also expanded its water distribution services beyond WHA's industrial estates by operating a demineralized water facility co-invested in the Asia Industrial Estate. This facility began operations in the fourth quarter of 2022, with a capacity of 1 million cubic meters per year.

In terms of the power business, the Company focuses on domestic and international clean energy operations. In the previous year, the Company expanded its solar rooftop business, in which it is one of the market leaders. Contracts to install solar power systems for leading customers, such as a 10-megawatt solar power generation system at the Mega Bangna project and a 7.7-megawatt solar carpark system at Ford Motor Co., Ltd., the largest solar carpark project in Thailand, demonstrate the Company's success. By the end of 2022, the Company had signed an additional solar power purchase agreement for 41 megawatts, bringing the total

cumulative solar power purchase agreements to 133 megawatts. The Company also continued to seek energy business prospects in the country, such as bidding on renewable energy projects in accordance with Ministry of Energy policies. The Company has passed the qualifications from participating in the auction, and the bidding results are expected to be announced in the first half of 2023. However, the Company remained committed to developing its power business to meet future demand, as evidenced by Peer-to-Peer Energy Trading : The Future of the Energy Market, which helped it win the Stock Exchange of Thailand's 2022 Best Innovative Company Award. Furthermore, if the government liberalizes the power industry, this platform will be key to the company's future power business development.

In terms of future business plans, the Company will focus on providing customers in WHA Group's industrial estates with a wide range of water products and wastewater management services. In addition, the Company will adopt the ESG concept as a guideline for its business operations, place a greater emphasis on high-quality water, utilize innovation to develop new products to meet customer needs, invest in renewable energy projects, explore new S-curve businesses, and pursue more opportunities for foreign investment.

For the operating results in this year, the Company had total revenue and normalized share of profits of 2,790 million baht, a net profit of 454 million baht, and a normalized net profit of 448 million baht. Total assets as of 31 December 2022 valued at 27,645 million baht, with a net interest-bearing debt to equity ratio of 1.01 times.

Lastly, the success described above would not have been possible without the support of all stakeholders, including the Board of Directors, Management, employees, business partners, and shareholders. On behalf of the Chief Executive Officer of WHA Utilities and Power Public Company Limited, I would like to thank all stakeholders for their unwavering support and confidence in the Company. These are the forces propelling the company's growth towards sustainability.

Mr. Somkiat Masunthasuwun

Chief Executive Officer



BOARD OF DIRECTORS



Ms. Jareeporn Jarukornsakul

Chairman of the Board of Directors/Chairman of the Executive Committee
Chairman of the Risk Management Committee/Nomination and Remuneration Committee member



Mr. Weidt Nuchjalearn

Independent Director/Chairman of Audit Committee/
Chairman of the Nomination and Remuneration Committee



Mrs. Punnee Worawuthichongsathit

Independent Director/Audit Committee member/
Chairman of the Corporate and Sustainable Development
Governance Committee



Mr. Ekajai Tivutanond

Independent Director/Audit Committee member/
Corporate Governance and Sustainable Development
Committee member/Nomination and Remuneration
Committee member



Mr. Numchai Lowattanatakul

Independent Director/
Risk Management Committee member



Mr. David Richard Nardone
Director/Executive Committee member/
Risk Management Committee member



Mr. Vivat Jiratikarnsakul
Director/Executive Committee member/Corporate Governance
and Sustainable Development Committee member



Mr. Somkiat Masunthasuwun
Director/Executive Committee member/
Chief Executive Officer



Mr. Pajongwit Pongsivapai
Director/Executive Committee member



Mr. Krailuck Asawachatroj
Director



MANAGEMENT AND CORPORATE SECRETARY



Mr. Somkiat Masunthasuwun
Chief Executive Officer



Mr. Akarin Prathuangsit
Chief Operating Officer



Mr. Prapon Chinudomsub
Chief Financial Officer



Mr. Khamhoung Ratsamany
Vice President of Utilities Operations



Mr. Varanon Laosuwan
Director of Utilities Business Development



Mr. Punrapee Noparumpa
Director of Power Business Development



Mr. Sumet Tepkhom
Director of International Power Business Development



Mrs. Rattana Shinawatra
Director of Accounting



Ms. Nutch Rattanajitbanjong
Corporate Secretary

Remark : Management refers to the first four top-ranking executives after Chief Executive Officer level as well as all other 4th ranking equivalent, and accounting or finance executives of department head level and up" in accordance with the Definition from notification of Capital Market Supervisory Board No.GorJor17/2551.

1

BUSINESS OPERATIONS

AND PERFORMANCE



ORGANIZATIONAL STRUCTURE AND OPERATION OF THE GROUP OF COMPANIES

1.1 POLICY AND BUSINESS OVERVIEW

WHA Utilities and Power Public Company Limited (the “Company” or “WHAUP”) was established on 30 June 2008. The Company’s core business relates to the : (i) utility business, i.e. procurement and distribution of raw water, production and distribution of industrial water, including other specific industrial water such as Demineralized water, and providing wastewater treatment services to operators in industrial estates and industrial lands; and (ii) power business by operated by the Company and through investment in power generation business, both domestically and abroad.

In addition to the exclusivity rights granted by the WHA Industrial Development Public Company Limited (“WHAID”) Group’s to operate water business, i.e. business relating to procurement, logistic, production and distribution of raw water, process water and wastewater treatment business in its industrial estates in Thailand 12 industrial areas - containing 11 industrial areas located in Thailand and 1 industrial area in Vietnam, the Company has also obtained the right of first refusal to invest in the natural gas distribution business and waste to energy business in those industrial estates and





industrial lands in Thailand for 50 years, starting from 30 March 2016 (as stated in the Strategic Partnership Agreement). WHAID Group and WHA Corporation Public Company Limited Group (“WHA”) have agreed not to compete with the Company in conducting water business and power business in Thailand and other Southeast Asia Countries for an indefinite term (as stated in the WHA Industrial Development Non-competition Agreement and the WHA Non-competition Agreement).

In relation to the utility business, the Company, WHA Water Company Limited and WHAUP Nghe An Joint Stock (both are a subsidiary in which the Company has a stake of 99.99%) are one of utilities service providers to companies in Thailand and Vietnam industrial estates. The Company’s aggregate maximum industrial water production capacity in all industrial estates and industrial lands is 375,576 cubic meters per day, with an aggregate maximum wastewater treatment capacity in all industrial estates of 135,456 cubic meters per day. In 2022, the Company’s and its subsidiaries’ aggregate average distribution quantity of raw water and industrial water in domestic industrial estates and industrial lands was 80.0 million cubic meters per year representing 219,308 cubic meters per day that the said quantity included the distribution quantity of demineralized water and premium clarified water, which has been distributed since October

2019 and June 2020 respectively. An aggregate average wastewater treatment in all domestic industrial estates and industrial lands was 36.8 million cubic meters per year representing 100,758 cubic meters per day. The Company and its subsidiaries also has policy to provide other public utilities to industrial operators both inside and outside industrial estates in the future. In 2022, the Company has established of WHAUP Asia Reclamation Water, a joint venture with Asia Industrial Estate (AIE) for producing and distribute water utilities services with Demineralized Water capacity of 2,500 cubic meter per day.

In addition, the Company already invest utilities business in international which was Vietnam. The Company holds 47% and 34% stake in two tap water companies, namely Cua Lo Water Supply Co- the producer and distributor of tap water in Nghe An and Duong River Surface Water Plant Co (SDWTP) - a leading tap water producer in Hanoi. Both projects have total capacity according to the shareholding equity of 23,000 and 300,000 cubic meters per day respectively. In 2022, WHAUP had total sales from Vietnam projects of 77,914 cubic meters per day or 28.4 million cubic meters per year according to shareholding equity. The Company has been awarded with ISO 9001 : 2015 for quality standards and ISO 14001 : 2015 for environmental standards.

In relation to the power business, WHA Energy Company Limited, a subsidiary in which the Company has a stake of 99.99 percent has jointly invested with leading power operators in Conventional Fuel and Renewable Energy generation businesses, both domestically and abroad. In addition to joint venture investment, there is Solar power project by WHAUP. As at 31 December 2022, the Company's aggregate power generating capacity in proportion to its equity in the commercially operating power plants was 683 MW - including commercially operating solar power plants by WHA group with 94 MW and Solar power plants by WHA group under construction with 39 MW. The company conducts a natural gas distribution business, through WHA Energy Company Limited's 35 per cent ownership in a joint venture which owns the WHA Eastern Seaboard NGD 2 Project at WHA ESIE 2 and the WHA Eastern Seaboard NGD 4 Project at WHA ESIE 4 which achieved commercial operation start in 2018 and 2019, respectively. In addition, the Company is studying and developing various energy innovations, such as peer-to-peer energy trading, energy storage, and microgrid, etc.

1.1.1 VISION, MISSIONS, GOALS AND STRATEGY

VISION

To be Asia's leader in utilities and power businesses providing total solutions to partners with good corporate governance as well as environmentally and socially friendly operations.

MISSIONS

1. To develop world class utilities and power solutions fitting customers' needs.
2. To vertically integrate solutions in utilities and power businesses and expand other market segment to increase products and services in Thailand and other Southeast Asia Countries.

3. To continuously develop human resources competencies to build talent and experience to enhance organizational core competency including encouraging workplace environment for employee wellbeing.
4. To nurture an innovative culture in the organization.
5. To add value to communities and the environment with good corporate governance and sustainable development strategies.

GOALS

The Company aims to be a leader in integrated utility and power businesses and to operate in compliance with the principles of good corporate governance with responsibility for the community, society and the environment. It also plans to expand its customer base in the segments of utilities and power services, both domestically and in the South East Asia countries and expand to related businesses in order to widen its range of products and services.

STRATEGY

1. Continuously improving its utility business and power business to ensure the constant and predictable generation of income, maximise profit and add value to shareholders.
2. Applying its expertise in management in respect of infrastructure, environment and good relationship with customers with the aim of expanding its business opportunities.
3. Efficiently using its human resources and financial assets to create the prospects of business investment.
4. Incessantly carrying out educational, community and environmental campaigns for the benefit of the community, society and all other stakeholders to maintain good relationship with locals.

1.1.2 KEY CHANGES AND DEVELOPMENTS

1

JUNE 2008

- The Company was established on 30 June 2008 under the name of Hemaraj Clean Water Company Limited with a registered capital of THB 645 million to produce and distribute industrial water for use in industrial estates owned by WHA Industrial Development Public Company Limited ("WHAID").



2

JULY 2008

- The Company entered into the Right Lease Agreement with WHAID and its subsidiaries to produce and distribute industrial water for use in four industrial estates owned by WHAID, namely WHA CIE 1, WHA EIE, ESIE and WHA ESIE 1 with an aggregate industrial water production capacity of 121,200 cubic meters per day.
- The Company acquired 99.99 percent of shares in WHA Water Company Limited ("WHAWT"). WHAWT has a registered capital of THB100 million and produces and distributes clarified water in WHA EIE having an aggregate clarified water production capacity of 43,200 cubic meters per day and wastewater treatment capacity of 30,000 cubic meters per day.



3

MARCH 2011

- WHA Energy Company Limited ("WHAEG"), a subsidiary of the Company, was incorporated on 2 March 2011 under the name of Hemaraj Energy Company Limited with a registered capital of THB100 million and was formed to invest in other companies engaging in power business. The Company holds 99.99 percent. of shares in WHA Energy Company Limited.



4

MARCH 2012

- WHAWT, a subsidiary of the Company, increased its clarified water production capacity in WHA EIE from 43,200 cubic meters per day to 86,400 cubic meters per day.



5

NOVEMBER 2012

- The Company increased its industrial water production capacity in WHA ESIE from 12,000 cubic meters per day to 30,000 cubic meters per day.



6

APRIL 2013

- The Company increased its industrial water production capacity in ESIE from 36,000 cubic meters per day to 48,000 cubic meters per day.



7

MAY 2013

- The Gas-fired Small Power Producer by Gulf JP NLL Power Plant, a joint venture between WHAEG and Gulf MP Company Limited ("Gulf MP") at shareholding 25.01 percent and 74.99 percent respectively. Gulf JP NLL Power Plant has an installed power capacity of 123 MW, located in WHA RLI which achieved the Commercial Operation Date (COD) on May 2013.



8

AUGUST 2014

- The Company was assigned from WHAID for the production and distribution of industrial water in WHA CIE 2. Its production capacity is 6,000 cubic meters per day.



9

JANUARY 2015

- The Company increased its industrial water production capacity in WHA ESIE 1 from 30,000 cubic meters per day to 54,000 cubic meters per day.



10

MARCH 2016

- On 30 March 2016, the Company and the WHAID Group's signed the Strategic Partnership Agreement and the Right Lease Agreements for the production and distribution of industrial water and the operation of wastewater treatment services in seven current projects namely WHA EIE, WHA CIE 1, WHA CIE 2, WHA ESIE 1, WHA ESIE 2, WHA SIL and WHA RIL. The lease term is 50 years from the signing date.
- The Company increased its registered capital from THB 645 million to THB 1,645 million for payment for the right lease for the production and distribution of industrial water and the operation of wastewater treatment services in seven current industrial estate projects of the WHAID Group's.



11

MAY 2016

- The Company increased its registered capital from THB 1,645 million to THB 3,200 million in order to receive all shares transferred of WHAEG.
- The Gas-fired Small Power Producer by Gulf VTP Power Plant, a joint venture between WHAEG and Gulf MP at shareholding 25.01 percent and 74.99 percent respectively. Gulf VTP Power Plant has an installed power capacity of 137 MW, located in ESIE which achieved the Commercial Operation Date (COD) on May 2016.



12

JUNE 2016

- WHAEG accepted a transfer of 74.99 percent. of each of the total shares of 11 solar rooftop power companies, which are WHA Gunkul 1-6, 8-10, 16 and 17, from WHA Corporation Public Company Limited Group's ("WHA")



13

JULY 2016

- On 21 July 2016, the Company's shareholders, during extraordinary general meeting No. 3/2016, resolved to approve the following matters : (i) the Company's conversion into a public limited company named WHA Utilities and Power Public Company Limited, (ii) the change in par value of THB 5 per share, and (iii) the capital increase from THB 3,200 million to THB 3,825 million by issuing 125 million ordinary shares with a par value of THB 5 each for an initial public offering. The Company's conversion into a public limited company was registered with the Ministry of Commerce on 10 August 2016.



14

NOVEMBER 2016

- The Gas-fired Small Power Producer by B.Grimm Power (WHA) 1 Power Plant, a joint venture between WHAEG and B.Grimm Power Public Company Limited ("BPWHA-1") at shareholding 25.01 percent and 74.99 percent respectively. B.Grimm Power (WHA) 1 Power Plant has an installed power capacity of 130 MW, located in WHA CIE 1 which achieved the Commercial Operation Date (COD) on November 2016



15

APRIL 2017

- The Company listed shares on the Stock Exchange of Thailand with registered capital of THB 3,825,000,000



16

MAY 2017

- The Gas-fired Small Power Producer Gulf VTP Power Plant, a joint venture between WHAEG and Gulf MP at shareholding 25.01 percent and 74.99 percent respectively with installed power capacity of 137 MW, located in ESIE, has achieved the Commercial Operation Date (COD) on May 2017.



17

JULY 2017

- The Extraordinary General Meeting on 30 June 2017 approved the changing of par value from 5 Baht to 1 Baht and the company's shares had been traded with the new par value starting from 13 July 2017.
- The Gas-fired Small Power Producer Gulf TS1 Power Plant, a joint venture between WHAEG and Gulf MP at shareholding 25.01 percent and 74.99 percent respectively, with installed power capacity of 134 MW, located in ESIE, has achieved the Commercial Operation Date (COD) on July 2017.



18

AUGUST 2017

- The Company issued THB 4,000 million of bond issuance to refinance existing bank loan to reduce finance cost.



19

SEPTEMBER 2017

- The Gas-fired Small Power Producer Gulf TS2 Power Plant, a joint venture between WHAEG and Gulf MP at shareholding 25.01 percent and 74.99 percent respectively, with installed power capacity of 134 MW, located in ESIE, has achieved the Commercial Operation Date (COD) on September 2017.



20

OCTOBER 2017

- The Company obtained right to develop the distribution and retail trade of natural gas projects from WHAID.



21

NOVEMBER 2017

- The Gas-fired Small Power Producer, Gulf TS3 Power Plant, a joint venture between WHAEG and Gulf MP at shareholding 25.01 percent and 74.99 percent respectively, with installed power capacity of 130 MW, located in WHA ESIE 1, has achieved the Commercial Operation Date (COD) on November 2017.



22

JANUARY 2018

- The Gas-fired Small Power Producer Gulf TS4 Power Plant, a joint venture between WHAEG and Gulf MP at shareholding 25.01 percent and 74.99 percent respectively, with installed power capacity of 130 MW, located in WHA ESIE 1, has achieved the Commercial Operation Date (COD) on January 2018
- The Company was assigned from WHAID for the production and distribution of industrial water in WHA ESIE 4. Its production capacity is 3,600 cubic meters per day.



23

MAY 2018

- WHAUP Nghe An Joint Stock Company ("WUPNA"), the subsidiary of WHAUP was established since 2 May 2018 with the registered capital of 29,950,800,000 VND to invest in utilities business.
- WUPNA entered into the Right lease and Land sublease agreement with WHA Industrial Nghe An Joint Stock Company on 28 May 2018, WUPNA shall invest and operate in the water utilities in WHA Industrial Zone1, Nghe An in Vietnam.



24

JUNE 2018

- The Company issued 5,000 million of bond issuance. 4,000 million of bond issuance to refinance existing bank loan to reduce finance cost and 1,000 million of bond issuance for working capital for operation and support the development of projects in the future.



25

AUGUST 2018

- The Company was established WHA Solar Company Limited ("WHASL") under WHAEG which is a subsidiary of the Company to carry out solar power business with a registered capital of THB 200 million



26

NOVEMBER 2018

- WHAUP entered into the 50 years Right lease agreement with WHA Industrial Estate Rayong Company Limited. (the joint venture company between WHAID. and IRPC) on 28 November 2018 to invest and operate in the water utilities in WHA Industrial Estate Rayong.



27

DECEMBER 2018

- WHA Eastern Seaboard NGD 2, a joint venture company between Gulf Energy Development Public Company Limited and MITG (Thailand) Company Limited set up to conduct the distribution and retail of natural gas via pipelines to industrial customers in WHA EISE 2 achieved the Commercial Operation Date (COD) in December 2018



28

JANUARY 2019

- Gulf NLL 2 Power Plant Project is a Small Power Producer (SPP) project, which is a joint venture between WHAEG and Gulf MP in the proportion of 25.01% and 74.99% respectively, with the installed capacity of 127 MW. It is located at WHA RIL Industrial Estate, which its commercial operation date was in January 2019.



29

APRIL 2019

- WUPNA acquired 47.3 percent of total shares in Cua Lo Water Supply Joint Stock Company ("Cua Lo") the water operation in Nghe An with the total capacity 4,745,000 cubic meters per year.



30

JUNE 2019

- WHA Project Eastern Seaboard NGD 4, a joint venture company between Gulf Energy Development Public Company Limited and MITG (Thailand) Company Limited set up to conduct the distribution and retail of natural gas via pipelines to industrial customers in WHA ESIE 4. achieved commercial operation date (COD) in June 2019.



31

AUGUST 2019

- WHAUP (SG) 2DR PTE. LTD. ("WUPSD"), the subsidiary of WHAUP entered into the Share Purchase Agreement to buy share of Duong River Surface Waterplant Joint Stock Company ("SDWTP"), WUPSD acquired 34 percent of total shares of SDWTP.



32

OCTOBER 2019

- WHAWT, a subsidiary of WHAUP has successfully commercial operation date (COD) of the Demineralized Water plant to sell Demin water to Global Power Synergy Public Company Limited. ("GPSC") under the water purchase agreement of 1.5 million cubic meters per year for 15 years.



33

NOVEMBER 2019

- CCE, a joint venture company established by Glow Group, SUEZ and the Company, an 8.63 MW industrial-waste-to-energy power plant, located in the WHA Chonburi Industrial Estate, Chonburi Province with a contracted capacity of 6.90 MW under a Power Purchase Agreement (PPA) with the Provincial Electricity Authority (PEA), has achieved commercial operation start in November 2019



34

DECEMBER 2019

- WHAUP enter into the 30 years land lease agreement with PTT PLC. to invest and operate the wastewater treatment plant in EECi (Wangchan Valley) with initial capacity 400,000 cubic meters per years.



35

JANUARY 2020

- The Company has executed an MOU with the Provincial Electricity Authority (PEA) for joint participation of the ERC sandbox programme and co-development of smart energy system in WHA industrial estates



36

FEBRUARY 2020

- The Company issued THB 3,000 million senior unsecured debentures to repay liabilities and to finance working capital expenditures



37

MAY 2020

- WHAUP has signed the water purchase agreement for Premium Clarified Water with Gulf VTP Company Limited, Gulf TS 1 Company Limited and Gulf TS 2 Company Limited for the capacity of 1.9 million cubic meters per year for 15 years.



38

JULY 2020

- Premium Clarified Water for GULF began COD at full capacity of 5,200 cubic meters at ESIE.



39

NOVEMBER 2020

- WHAWT, a subsidiary of WHAUP has signed the water purchase agreement for Demineralized Water with Global Power Synergy Public Company Limited. ("GPSC") (phase 2) for the capacity of 1.6 million cubic meters per year for 15 years.



40

DECEMBER 2020

- The Company has executed an MOU with PTT PLC and Sertis Company Limited for the joint development of renewable energy trading platform (Smart Energy Platform) in WHA industrial estates.
- The Wastewater Reclamation Project, the project in which the Company has expanded the investment, at WHA EIE with total production capacity of 25,000 cubic meters per day completed the construction.



41

FEBRUARY 2021

- The Company issued THB 700 million senior unsecured debentures to repay liabilities and/or to finance working capital expenditures



42

MARCH 2021

- WHAUP has entered into MOU with Ban Chang municipality to collaborate in Water management program under Ban Chang Smart City supported by EEC.



43

JULY 2021

- The Company issued THB 3,500 million senior unsecured debentures to repay liabilities and/or to finance working capital expenditures



44

AUGUST 2021

- WHAWT, a subsidiary of WHAUP signed Joint Venture Agreement (JVA) with Asia Industrial Estate Co., Ltd in order to jointly develop utilities business including wastewater reclamation in AIE (Maptaphud) industrial estates.



45

SEPTEMBER 2021

- WHASL, a subsidiary of WHAUP signed a power purchase agreement (PPA) with Prinx Chengshan Tire Company Limited to invest in a 19.44 MW solar rooftop system for electricity sale over 25 years.
- WHAUP received the Outstanding Innovative Company Awards from the SET Awards 2021 for its innovation on Demineralized Reclaimed Water, an alternative water resource for sustainable development.



46

NOVEMBER 2021

- SET selected the company as one of the 'Sustainable Stock' or listed company in the Thailand Sustainability Investment (THSI) for the year 2021, for the second consecutive year. This reflects the company's potential to grow a sustainable business with good corporate governance, as well as to create value for its stakeholders including Environmental, Social and Governance (ESG)



47

DECEMBER 2021

- WHAUP has executed Water Purchase Agreement with Gulf TS3 and Gulf TS4 for the 3,800 cu.m. per day Premium CW to be COD in July 2022.



48

JANUARY 2022

- The Company issued THB 1,000 million senior unsecured debentures to repay liabilities and/or to finance working capital expenditures.



49

JUNE 2022

- The Company issued 2 debentures worth THB 2,800 million, Tranches 1 is a Green Bond which offered for the first time. The successful in this offering reflected investor's confidence in the Company's business fundamentals, and the Company's commitment to do the business with environment care and towards to sustainable development which has always been the core of the Company's business operations.

22

JULY 2022

- Premium Clarified Water for Gulf Tasit 3 and Gulf Tasit 4 power plant began COD at full capacity of 3,800 cubic meters at WHA ESIE 1

V

23

AUGUST 2022

- WHAUP signed Water Purchase Agreement with Cardinal Health 222 (Thailand) Limited, located in WHA ESIE4, to supply industrial water including Premium Clarified Water at the capacity of 4,600 cu.m. per day

V

24

OCTOBER 2022

- WHAUP AIE Reclamation Water Co., Ltd., a subsidiary of WHAUP, started the first supply of Demin Water to Purac (Thailand) Ltd. at the contractual capacity of 2,160 cubic meter per day.
- SET selected the company as one of the 'Sustainable Stock' or listed company in the Thailand Sustainability Investment (THSI) for the year 2022, for the third consecutive years. This reflects the company's potential to grow a sustainable business with good corporate governance, as well as to create value for its stakeholders including Environmental, Social and Governance (ESG)

V

25

DECEMBER 2022

- The Company issued THB 1,500 million senior unsecured debentures to repay liabilities and/or to finance working capital expenditures.

V



1.1.3 REPORT ON SPENDING OBJECTIVES OF MOBILIZED CAPITAL

Use of proceeds from debentures offerings in 2022

Unit : Million Baht

Use of spending	Approximate amount	Approximate spending period	Detail
Loan/Debt instruments repayment, working capital and/or business operation investment	1,000	By February 2022	The Company spent the bonds proceeds according to the objectives stated in the offerings documents.
	2,800	By June 2022	
	1,500	By December 2022	

1.1.4 OBLIGATIONS SHOWN IN THE PROSPECTUS AND/OR CONDITIONS OF THE OFFICE (IF ANY) AND/OR CONDITION OF SECURITIES RECEIVABLE OF THE STOCK EXCHANGE OF THAILAND (IF ANY)

-None-

1.1.5 COMPANY INFORMATION

Company Name	: WHA Utilities and Power Public Company Limited
Security Name	: WHAUP
Head office	: 777 WHA TOWER, 22 nd Floor, Unit 2203-2205, Moo 13, Debaratna Road (Bangna-Trad) KM.7, Bang Kaeo, Bang Phli Samut Prakarn 10540 Thailand
Telephone	: +66-2719-9559
Fax.	: +66-2719-9558
Website	: www.wha-up.com
Nature of business	: (1) Utility business of distributing raw water, producing and Distributing industrial water and providing wastewater treatment services to operators in industrial estates and industrial land (2) Power business through investment in power generation business, both domestically and abroad.
Corporate registration no.	: 0107559000401
Registered capital	: THB 3,825,000,000
Issued and Fully Paid-up Capital	: THB 3,825,000,000, consisting of 3,825,000,000 common shares at THB 1 per share

1.2 NATURE OF BUSINESS

1.2.1 INCOME STRUCTURE

The Company reported the total revenue, Normalized Share of Profits and Dividend Income ("Normalized Share of Profits") ending 31 December 2020, 31 December 2021 and 31 December 2022 as follows

	As of 31 December					
	2020		2021		2022	
	MB	%	MB	%	MB	%
Utilities Business :						
Total Revenue	1,639.5	62.9	1,926.2	63.8	2,111.4	75.7
- Raw Water	250.4	9.6	372.0	12.3	424.2	15.2
- Industrial Water	1,140.8	43.8	1,228.7	40.7	1,221.4	43.8
- Value added products	93.0	3.6	149.8	5.0	178.6	6.4
- Wastewater	140.5	5.4	163.9	5.4	162.5	5.8
- Other Incomes	14.8	0.6	11.8	0.4	124.7	4.5
Normalized Share of Profits/(Loss) from Investments	-159.7	-6.1	-204.1	-6.8	-210.6	-7.5
- SDWTP, Cua Lo, and AIE	-159.7	-6.1	-204.1	-6.8	-210.6	-7.5
Total Revenue and Normalized Share of Profits/(Loss) from Investments	1,479.8	56.8	1,722.1	57.1	1,900.8	68.1
Power Business :						
Total Revenue	58.5	2.2	254.6	8.4	331.6	11.9
- Total Revenue from Solar Business	58.5	2.2	254.6	8.4	331.6	11.9
Normalized Share of Profits/(Loss) from Investments	1,024.3	39.3	1,006.3	33.4	521.0	18.7
- Gheco-One	260.4	10.0	141.9	4.7	75.5	2.7
- HHPC	34.2	1.3	36.3	1.2	44.5	1.6
- Gulf JP NLL	71.0	2.7	66.4	2.2	-19.3	-0.7
- CCE	50.7	1.9	27.1	0.9	12.1	0.4
- Renewable Energy ^{1/}	5.6	0.2	2.9	0.1	-1.4	-0.1
- Gulf MP	439.4	16.9	526.9	17.5	312.9	11.2
- Dividend Income from GIPP	36.5	1.4	50.0	1.7	35.4	1.3
- Others ^{2/}	126.6	4.9	154.8	5.1	61.4	2.2
Total Revenue, Normalized Share of Profits and Dividend from Investments	1,082.8	41.6	1,261.0	41.8	852.6	30.6

	As of 31 December					
	2020		2021		2022	
	MB	%	MB	%	MB	%
Other Incomes ^{3/}	42.8	1.6	33.8	1.1	36.6	1.3
Total Revenue, Normalized Share of Profits and Dividend from Investments	2,605.4	100.0	3,016.8	100.0	2,790.0	100.0
Gain/(Loss) from Foreign Exchange	38.8	N/A	-128.3	N/A	5.6	N/A
Total Revenue, Share of Profits and Dividend from Investments	2,644.2	N/A	2,888.5	N/A	2,795.6	N/A

Remarks :

^{1/} Renewable Energy includes investments in Gulf Solar, WHA GK 1, 3, 6 and 17

^{2/} Others includes investments in B.Grimm Power (WHA) 1 Limited, Gulf WHA MT Natural Gas Distribution Company Limited, Stella Power 1 Company Limited and Stella Power 2 Company Limited

^{3/} Other Incomes i.e. Interest income, guarantee fee

The Company reported the Revenue and Normalized Share of Profit/(Loss) from Investments in utilities business at THB 1,722.1 million and THB 1,900.8 million or equivalent to 57.1% and 68.1% of Total Revenue, Normalized Share of Profit and Dividend Income in 2021 and 2022, respectively. In addition to Utilities business, the Company reported the Revenue, Normalized Share of Profits and Dividend Income from Investments in Power business at THB 1,261.0 million and THB 852.6 million or equivalent to 41.8% and 30.6% of Total Revenue, Normalized Share of Profits and Dividend Income from Investments in 2021 and 2022, respectively. Furthermore, the Company reported Other Incomes such as interest income, guarantee fee amount of THB 33.8 million and THB 36.6 million in 2021 and 2022, respectively.

Having managements with expertise to overlook Utilizes business and form a partnership with WHAID, the Company has been a one of the major producers and providers of industrial water in Thailand IEs. The Company occupies a large market share of industrial water services to IEs and industrial land. Currently, it has provided utilities services to areas over 71,000 rai^{4/}. WHA

EIE has the highest utilization rate because it serves many key industrial customers such as Petrochemical, Power plant and Steels industries. The Company has many competitive advantages which are barriers to entry including (1) high investment costs; (2) strict legal and laws compliance; (3) economies of scale. As a resulted of these barriers to entry, there are a very small number of utilities services providers in Thailand.

For power business overview, the Company has partnered with leading Power companies such as GPSC group, Gulf group and BGRIMM power to invest in power plants located in Thailand and abroad. In addition to the partnerships, the Company has 100% investment in solar power projects. As of 31 December 2022, the Company has 644 MW equity of total power portfolio. The Company's cumulative solar power private PPA installed capacity stood at 133 MW including 94 MW of solar power projects which have already commenced operation and addition 39 MW of solar power projects under construction.

Source :

^{4/} WHA Industrial Development Public Company Limited ("WHAID")

1.2.2 PRODUCT INFORMATION

1. UTILITY BUSINESS

(1) NATURE OF PRODUCTS OR SERVICES AND DEVELOPMENT OF BUSINESS INNOVATION.

The Company and its subsidiaries engage in the utility business by providing utility services mainly to operators in industrial estates and industrial lands. Utilities services provided are fundamental services for industrial estates and industrial lands. The nature of the Company's products and services is detailed as follows :

1. PROCUREMENT AND DISTRIBUTION OF RAW WATER

The WHAUP Group procures and distributes raw water to industrial operators in WHA Industrial Development Public Company Limited Group ("WHAID") industrial areas. The Company offers raw water as an alternative of water consumption for industrial operators. The WHAUP Group's core customers are operators in steel industry, IPPs and SPPs.

2. PRODUCTION AND DISTRIBUTION OF INDUSTRIAL WATER

The WHAUP Group produces and distributes industrial water to industrial operations. This product can be divided into 4 categories :

- (1) **Process Water** : Process water is industrial water that has undergone the processes of sedimentation, filtration and chlorination for disinfection. The final product is used in the production process in industrial plants in general. The WHAUP Group's core customers include the automotive industry (e.g., automotive assembly plants and auto part manufacturing plants), food industry and electronics industry.
- (2) **Clarified Water (CW)** : Clarified water is produced through the processes of sedimentation, filtration and chlorination. Lower quantity and concentration of chlorine is used in chlorination process for clarified water, compared to process water, so that a very small amount of chlorine is left in the clarified water product when it is distributed to customers. This product is in great demand for customers in heavy industries

such as petrochemical, given that chlorine may cause corrosion in machinery and equipment used in those industries.

- (3) **Premium Clarified Water (PCW)** : PCW is the clarified water produced using the membrane technology (Reverse Osmosis) and has higher quality compared to the clarified water.
- (4) **Demineralized Water** : Demineralized water is the highly pure water used in some industry such as Power plant, Petrochemical, Electronics etc. WHAUP has started and became the first one to sell the Demineralized water in 2019 at WHA EIE.

3. WASTEWATER TREATMENT

The WHAUP Group provides central wastewater treatment ponds management services of industrial estates. Industrial plant releases wastewater together to ensure that the wastewater is treated in accordance with applicable standards imposed by the Ministry of Industry before being discharged into natural sources of water or being recycled into the production process.

4. VERTICAL INTEGRATION TO THE RAW WATER RESOURCES DEVELOPMENT

From the external factor of drought situation and water resource reliability, the Company started to extend its business to cover self-supply of the water resource. In 2021, the Company has started project related to the water reservoir and be able to claim more security in water resources issue to the operation and customer, especially in EEC area.

According to strategy to further develop its utilities and power businesses both inside and outside WHA Group's. In 2022, WHA Water (WHAWT), a subsidiary in which WHAUP holds a 99.99% stake, to form a joint venture with Asia Industrial Estate, called "WHAUP Asia Reclamation Water Company Limited" (WHAUP AIE). The new JV will provide Asia Industrial Estate customers with recycled water, demineralized water and other products and services with Demineralized Water capacity of 1,000,000 cubic meter per year which was started operation in quarter 4 in 2022. The Company has been awarded with ISO 9001 : 2015 for quality standards and ISO 14001 : 2015 for environmental standards.

In addition, the Company already invest utilities business in international which was Vietnam. The Company holds 47% and 34% stake in two tap water companies, namely Cua Lo Water Supply Co- the producer and distributor of tap water in Nghe An and Duong River Surface Water Plant Co (SDWTP) - a leading tap water producer in Hanoi. Both projects have total capacity according to the shareholding equity of 23,000 and 300,000 cubic meters per day respectively.

The Company now operates utilities in the WHAID Group's area by leasing the right to operate utilities and providing utility management services in the WHAID Group's area. There are also some project that is not under the WHAID's right lease agreements or located outside WHA Group territory. The Company's business operations are as follows :

Location	The Land on Which the Property Is Located		Property Ownership		Nature of Business ^{1/}
	Leased Land	Utility Land	The Company and Subsidiaries	Developer	
WHA Chonburi Industrial Estate 1					
Industrial Water Plant		✓		✓	50-year lease of operating rights
Wastewater Treatment Plant		✓		✓	50-year lease of operating rights
WHA Eastern Industrial Estate (Map Ta Phut)					
Industrial Water Plant	✓ ^{2/}		✓ ^{2/}		Ownership
		✓ ^{3/}		✓ ^{3/}	50-year lease of operating rights
Wastewater Treatment Plant		✓		✓	50-year lease of operating rights
Eastern Seaboard Industrial Estate (Rayong)					
Industrial Water Plant		✓		✓	25-year lease of operating rights ^{4/}
Wastewater Treatment Plant		✓		✓	Management agreement
WHA Saraburi Industrial Land					
Industrial Water Plant		✓		✓	50-year lease of operating rights
Wastewater Treatment Plant		✓		✓	50-year lease of operating rights
WHA Rayong Industrial Land					
Industrial Water Plant		✓		✓	50-year lease of operating rights
Wastewater Treatment Plant		✓		✓	50-year lease of operating rights
WHA Eastern Seaboard Industrial Estate 1					
Industrial Water Plant	✓ ^{5/}	✓ ^{5/ 6/}	✓ ^{5/}	✓ ^{6/}	50-year lease of operating rights
Wastewater Treatment Plant		✓		✓	50-year lease of operating rights
WHA Chonburi Industrial Estate 2					
Industrial Water Plant		✓	✓		50-year lease of operating rights
Wastewater Treatment Plant		✓		✓	50-year lease of operating rights
WHA Eastern Seaboard Industrial Estate 2					
Industrial Water Plant	✓		✓		50-year lease of operating rights
Wastewater Treatment Plant		✓		✓	50-year lease of operating rights

Location	The Land on Which the Property Is Located		Property Ownership		Nature of Business ^{1/}
	Leased Land	Utility Land	The Company and Subsidiaries	Developer	
WHA Eastern Seaboard Industrial Estate 4					
Industrial Water Plant	✓		✓		50-year lease of operating rights
Wastewater Treatment Plant		✓	✓		50-year lease of operating rights
WHA Logistic Park 1					
Industrial Water Plant		✓		✓	Management agreement
Wastewater Treatment Plant	✓ ^{7/}			✓	Management agreement
WHA Eastern Seaboard Industrial Estate 3					
Industrial Water Plant	✓		✓		50-year lease of operating rights
Wastewater Treatment Plant		✓		✓	50-year lease of operating rights
WHA Industrial Zone 1 Nghe An					
Industrial Water Plant	-	-	-		50-year lease of operating rights
Wastewater Treatment Plant		✓		✓	50-year lease of operating rights
Eastern Economic Corridor of Innovation (EECI)					
Industrial Water Plant	-	-	-	-	-
Wastewater Treatment Plant	✓		✓		50-year lease of operating rights
WHA Rayong 36					
Industrial Water Plant	✓		✓		50-year lease of operating rights
Wastewater Treatment Plant		✓		✓	50-year lease of operating rights
ASIA Industrial Estate (Maptaphud) ^{8/}					
Industrial Water Plant		✓	✓		30-year of operating rights under throughput agreement

^{1/} In addition, the Company has leased the right to operate raw water supply and distribution business in the industrial estates of the WHAID Group for 50 years starting from 30 March 2016 (except Eastern Seaboard Industrial Estates).

^{2/} WHA Water Company Limited ("WHAWT") has ownership in 2 Industrial Water Plants (water for chlorine-free production process) with total capacity of 86,400 cu. m./day

^{3/} The Company has leased the right to utilize the water production plant for industrial purposes, which is located on the utility land. The plant has a capacity of 12,000 cu. m./day

^{4/} The Company has leased the rights to produce and distribute industrial water, namely process water, and clarified water, from Eastern Seaboard Industrial Estate (Rayong) Company Limited

^{5/} The Company has an Industrial Water Plant located on leased land with a capacity of 24,000 cu. m./day, as well as an Industrial Water Plant located on utility land with a capacity of 18,000 cu. m./day

^{6/} The Company has leased the right to utilize the water production plant for industrial purposes, which is located on the utility land. The plant has a capacity of 12,000 cu. m./day.

^{7/} Wastewater treatment equipment for WHA Logistics Park 1 is located on each customer's leased land or sellable area.

^{8/} Operated under the JV company, WHAUP AIE Reclamation Water Company Limited

INNOVATION DEVELOPMENT

The Company has started and introduced the Innovation Development programs in various perspectives in this recent year. The Company continue to develop the program and achieve some significant successes of innovation development such as;

1. In term of the Operational excellence, the Company has initiated the Digital Transformation project through the development of Smart Utilities systems, such as SCADA systems for remote control and GIS model systems for water supply management, as well as human resource development to increase work efficiency and technology literacy.
2. In term of Product, the Company continuously innovate the new utilities or services that match customers' rising demand. In 2020-2021, the Company has delivered Value Added Products such as Premium CW or Demineralized water which are the product required for manufacturing. To provide service directly from central utilities, customer can save its resources to its core business.
3. In term of Sustainability, innovation process as to serve circular economy like Demineralized Reclaimed Water is one of the successes. The Company can mitigate environmental impact and community conflict significantly through the program.

For innovation development between 2019 and 2020, the budget for research and development (R&D) is included in the engineering expenditures and is part of the budget for Engineering - Procurement - Construction (EPC) of the project, such as the construction of a pilot plant to determine the optimal membrane type for the project. In 2021, the Company budgeted approximately Baht 5 million for the development of the Smart Utilities Platform at WHA Eastern Industrial Estate (Map Ta Phut), which includes the development of a GIS model, a hydraulics model, and an automatic meter reading system. The Company invested approximately Baht 2 million in 2022 to expand the GIS model and hydraulic model to WHA Industrial Estate Eastern Seaboard 1 and Eastern Seaboard Industrial Estate.

For Innovation Development plan 2023 onward, the Company focus on develop innovation 2 concepts such as : concepts such as :

1. Actions to build on past performance, i.e., increasing the amount of wastewater reclamation and enhancing it with technology that can increase efficiency, such as introducing technology that can increase the recycling rate of the membrane As well as expanding the area of Smart Utility systems in various areas.
2. Increasing the capability in terms of variety of products in order to best satisfy the needs of customers.

(2) MARKETING AND COMPETITION

1. MARKETING STRATEGIES

In conducting utility business, the Company and its subsidiaries pursue the following key marketing strategies :

(1) CONTINUOUS EXPANSION OF UTILITIES SERVICES IN TANDEM WITH THE NEW WHAID'S INDUSTRIAL ESTATES

WHAUP will continue to expand its utilities facilities in the new WHAID's industrial estates both in Thailand and in regional countries in order to provide industrial water distribution and wastewater treatment ponds management services to industrial customers as well as introduce other water solutions to satisfy the needs of customers in term of operation management and financial.

(2) PROACTIVE IN EXPANDING UTILITIES BUSINESS OUTSIDE WHAID'S INDUSTRIAL ESTATES

WHAUP aims to capture business opportunities from the increasing demand of raw water, industrial water and wastewater management in both industrial and non-industrial markets particularly in the EEC area. The company is developing business alliances with other industrial estate developers to expand utilities business in non-WHA industrial estates by leveraging on its expertise and experience in utilities business, the ability to control cost as well as its well understanding of industrial customers' need. Focus area for non-WHAID is the Value-added products such as Demineralized Water and Premium Clarified Water.



For non-industrial market, the company plans to build up strong relationship with local authorities as well as communities to develop potential collaborations on utilities distribution and management services to serve growing water consumptions.

(3) INTRODUCTION OF NEW SOLUTIONS, INNOVATION OF UTILITIES BUSINESS TO THE MARKET

In order to satisfy various and sophisticated needs of industrial customers, WHAUP targets to offer a more variety of products to customers with a focus on membrane technology and reclamation concept adoption in creating new types of industrial water such as Recycled Water/Reclamation Water, Demineralized Water, Desalination System, Wastewater Pre-treatment, etc. These new solutions or innovations will help reduce raw water cost and offer alternative raw water sources which will not only to serve existing customers but will also help create new customer base.

(4) DIGITALIZATION FOR OPERATIONAL EFFICIENCY ENHANCEMENT

The company has a philosophy of continual business development that focuses on increasing capabilities, enhancing efficiency, and enhancing customer satisfaction. The Company has launched the development

of a Smart Metering system that can minimize the cost of data collection and prevent abnormalities that may occur during water delivery service by studying water usage patterns and the occurrence of abnormalities. In addition, the development of digital systems for public utilities supports operations in line with the Company's strategies and business plans, which take into account the rapid and ongoing development of integrated utilities in the digital world.

(5) EXPANSION INTERNATIONAL MARKETS, PARTICULARLY IN VIETNAM AS THE HIGHEST POTENTIAL MARKET

The company expanded its utilities business to regional countries, especially to the countries with high utilities consumption, so it targets on international markets especially Vietnam which is high potential country since the number of populations is growing, the economic growth is strong leading to the increasing manufacturing activities. Currently, WHAUP has started operating Utilities business in Vietnam by establishing a subsidiary to operate since May 2018. The Company also invested in 2 water supply companies in Vietnam in 2019. In addition, the Company also had business partners which have potential to seek for investment opportunities in the water business.

2. DISTRIBUTION AND TARGET CUSTOMER

DISTRIBUTION

The Company delivers raw water and industrial water obtained from the Company's and its subsidiaries' Industrial Water Plants to each customer through the installed water pipes. Related equipment will be installed to control the pressure sufficiently to distribute water to the customer's premises, as well as a meter to track the customer's monthly water consumption.

For the management of wastewater treatment ponds in the industrial estates, industrial wastewater is transported through sewage pipes to be brought into the wastewater treatment pond of the industrial estate for treatment before being released into natural water resources.

The Company currently delivers raw water and industrial water and provides wastewater management services to roughly 1,000 WHAID Group customers in 10 industrial areas throughout Thailand and 1 industrial area in Vietnam. The Company also provides wastewater management services outside the WHAID Group's industrial estates and industrial lands, totaling 1 location.

SERVICE CHANNEL

1. The Company offers utility services to its existing customers. The Company will conduct a survey of customer needs to provide products that meet those needs. The product can be classified into 2 types, as detailed below :
 - 1.1 Current products provided by the Company in growing quantities because of rising customer demand for water or wastewater treatment. This could be a result of business expansion or modifying the operating model.

- 1.2 Other products : To become the total solution provider, the Company plans to offer products and utility services based on customer needs, including high-quality water, particularly Demineralized water, reverse osmosis water, and wastewater pretreatment services.

2. The Company will offer utility services to new customers, including new operators in the industrial area of WHAID Group, which is the Company's business partner. The Company will offer products both current products and other products according to the requirements of customers, industrial estate developers, and operators outside the WHAID Group

KEY CUSTOMER

The Company and its subsidiaries earn revenue from the first 10 major customers, representing 43.5% and 45.8% of the Company's utilities business revenue in 2021 and 2022, respectively.

The Company and its subsidiaries have no revenue from any customer with a value higher than 30% of revenue from the utility business in 2021 and 2022. However, the Company and its subsidiaries have 4 customers in 2021 and 5 customers in 2022 with a revenue proportion exceeding 5% of the total revenue, most of which are customers in petrochemical and power plants.

Each customer has a different water consumption pattern, based on its business because each industry has different water requirements during the manufacturing process. The power plant and petrochemical industries consume more water on average than other industries.

Industry	Average Water Consumption (cu. m./rai/day)
Power	80-120
petrochemical	40-60
Others ^{1/}	4-7

Note : ^{1/} Others include Automotive Group, Consumer Goods Group, and Electronics Group, etc.

Source : The Company

Currently, the Company and its subsidiaries earn all revenues from utility business with WHAID Group industrial operators. The revenue structure of the Company's and its subsidiaries' utility business is classified by customer's sector. The details are presented in the consolidated financial statements for the years 2020, 2021, and 2022 :

Industry	As of 31 December		
	2020	2021	2022
	Percentage	Percentage	Percentage
Petrochemical	40.1	40.4	41.0
Power	23.1	23.4	22.8
Automotive	11.7	10.5	12.9
Steel	8.2	9.7	10.2
Electronics	4.4	3.8	3.3
Consumer Goods	5.4	5.2	6.2
Building Materials	2.9	2.3	2.7
Others ^{1/}	4.2	4.7	0.9
Total	100.0	100.0	100.0

Note :

^{1/} Others include Logistics Group, Industrial Service Group, etc.

In addition, the revenue structure of the Company's and its subsidiaries' utility business can be classified by industrial estates and industrial lands. The details are presented in the consolidated financial statements for the years 2020, 2021, and 2022 :

Location in Thailand and Vietnam	As of 31 December					
	2020		2021		2022	
	THB million	Percentage	THB million	Percentage	THB million	Percentage
WHA Chonburi Industrial Estate 1 ("WHA CIE 1")	90.0	5.5	105.6	5.5	105.2	5.0
WHA Eastern Industrial Estate (Map Ta Phut) ("WHA EIE")	883.1	54.4	1,029.4	53.8	1,033.1	48.9
Eastern Seaboard Industrial Estate (Rayong) ("ESIE")	216.8	13.3	246.0	12.9	266.7	12.6
WHA Saraburi Industrial Land ("WHA SIL")	150.1	9.2	154.8	8.1	129.8	6.1
WHA Rayong Industrial Land ("WHA RIL")	98.4	6.1	103.1	5.4	98.9	4.7
WHA Eastern Seaboard Industrial Estate 1 ("WHA ESIE 1")	155.5	9.6	229.5	12.0	302.4	14.3
WHA Chonburi Industrial Estate 2 ("WHA CIE 2")	2.4	0.1	3.7	0.2	4.5	0.2
WHA Eastern Seaboard Industrial Estate 2 ("WHA ESIE 2")	15.1	0.9	22.4	1.2	29.9	1.4
WHA Eastern Seaboard Industrial Estate 3 ("WHA ESIE 3")	6.7	0.4	11.5	0.6	13.0	0.6
WHA Eastern Seaboard Industrial Estate 4 ("WHA ESIE 4")	6.4	0.4	6.9	0.4	98.1	4.6
WHA Industrial Zone 1 - Nghe An, Vietnam	0.2	0.0	1.4	0.1	5.0	0.2
WHA Rayong 36 Industrial Estate ("WHA Rayong 36")	0.0	0.0	0.0	0.0	24.7	1.2
Total	1,624.7	100.0	1,914.4	100.0	2,111.4	100.0

Note :

The revenue listed in the table is the revenue from the utilities business and excludes other revenues from the utilities business, such as additional water consumption request fee and management fee.

Additionally, the Company earn revenue from the management of the wastewater treatment business in the Eastern Seaboard Industrial Estate (Rayong), and the management of the industrial water production and distribution, as well as the wastewater treatment business in WHA Logistics Park 1.

3. PRICING

The Company has a pricing policy for utility services based on their cost of services plus profit margins. The Company will consider the price for the service that is comparable to other industrial estates utility providers. However, the Company has the right to determine the price that is reasonable for the customer on an individual basis. When a customer's utility consumption is excessive, the Company must supply raw water in sufficient quantity to suit that customer's needs. Additionally, the Company reviews the service price adjustments annually. The price will be comparable to the market pricing in the industrial estate area at the time. Price adjustment must be approved by the Industrial Estate Authority of Thailand ("IEAT") through industrial estate developers, who will seek approval from the IEAT for the Company.

For utilities that are not required to seek approval from the IEAT, the Company continues to use the cost of services method plus profit margins and market prices comparison method for certain items. Prices may vary depending on the specifics of the project and contract, such as the duration of the project or the amount invested in each project or product.

4. INDUSTRY CONDITION AND COMPETITION

OVERVIEW OF INDUSTRIAL CONDITION FOR THE USE OF WATER IN THAILAND

Thailand is regarded as one of the consumer countries that consume the largest amount of water in Southeast Asia. The purposes of water consumption can be divided into 2 main groups, which are (1) household sector, such as water utilization for consumption and tourism, and (2) industrial sector, such as industrial factories. However, according to the master plan on water resources management 20 years (B.E. 2018-2037) prepared by the Water Resources Policy and Management Committee, Department of Water Resources, it was reported that, Thailand has a high volume of water consumption, particularly in irrigated

agricultural areas, resulting in a high level of water consumption for agriculture. Furthermore, as a growth in population and the expansion of urban areas affect the development of industrial and economic areas, the overall demand for water consumption in the country tends to rise. According to the 2018 guideline for analyzing the use of industrial water in Thailand published by the Water and Environment Institute for Sustainability of the Federation of Thai Industries, Thailand consumed 147,747 million cubic meters of water for various activities. The allocation of water included 113,961 million cubic meters for agricultural use, 1,913 million cubic meters for industrial use, and 27,090 million cubic meters for ecological preservation. Thailand's industrial water use would reach to 2,793 million cubic meters in 2037, with an average annual growth rate of 1.09%, according to projections of industrial water use.

INDUSTRY CONDITION FOR WATER CONSUMPTION IN THE INDUSTRIAL SECTOR

The Thai economy expanded in 2022 compared to 2021 because private consumption and tourism recovered from the effects of the COVID-19 pandemic. This was made possible by widespread vaccination and the easing of international travel restrictions, which were lifted completely at the beginning of the third quarter of 2022. As a result, domestic economic activities began to recover. The domestic manufacturing industry also benefited from the country's opening-up measures, particularly the automotive industry, which has been stimulated by the country's clean energy policy, resulting in increased demand and supply for electric vehicles. The iron and steel industry recovered as construction began. According to the 13th National Economic Development Plan (2023-2027), the government has a policy to drive economic restructuring in the manufacturing sector to transition into an innovation-driven economy and towards sustainable development. It aims to transform industries and services, develop the country into an investment hub, and implement a significant logistics strategy focusing on an infrastructure development plan to facilitate trade and investment. The Company sees an opportunity to grow its utilities business, particularly its industrial water products and value-added water products, such as demineralized water and premium clarified water, to meet the needs of the industry and provide industrial water users with an alternative source of high-quality water for their production processes.



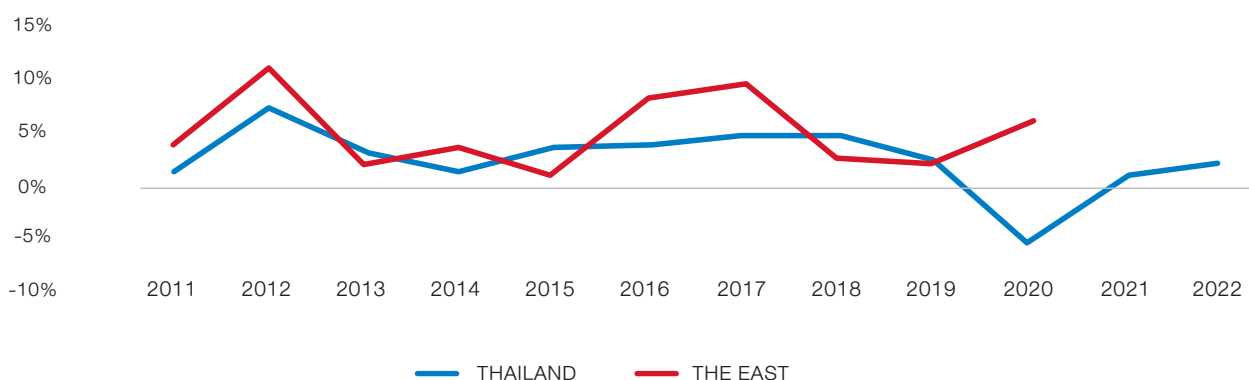
The report of the Monetary Policy Committee (MPC) forecasts that Thailand's GDP will grow by about 3.7% in 2023.

During the past several years, the economic growth in the eastern part of Thailand (in which the Company is conducting the business) has surpassed the country's overall economic growth because it is an industrial region which benefited from the growth in domestic consumption and exports. The government has expedited to be the investment and operation in the EEC area to be

concrete as proven from a number of the projects that have been approved and the private has participated in the investment in the past. The investors to have confidence in Thailand and especially the EEC area.

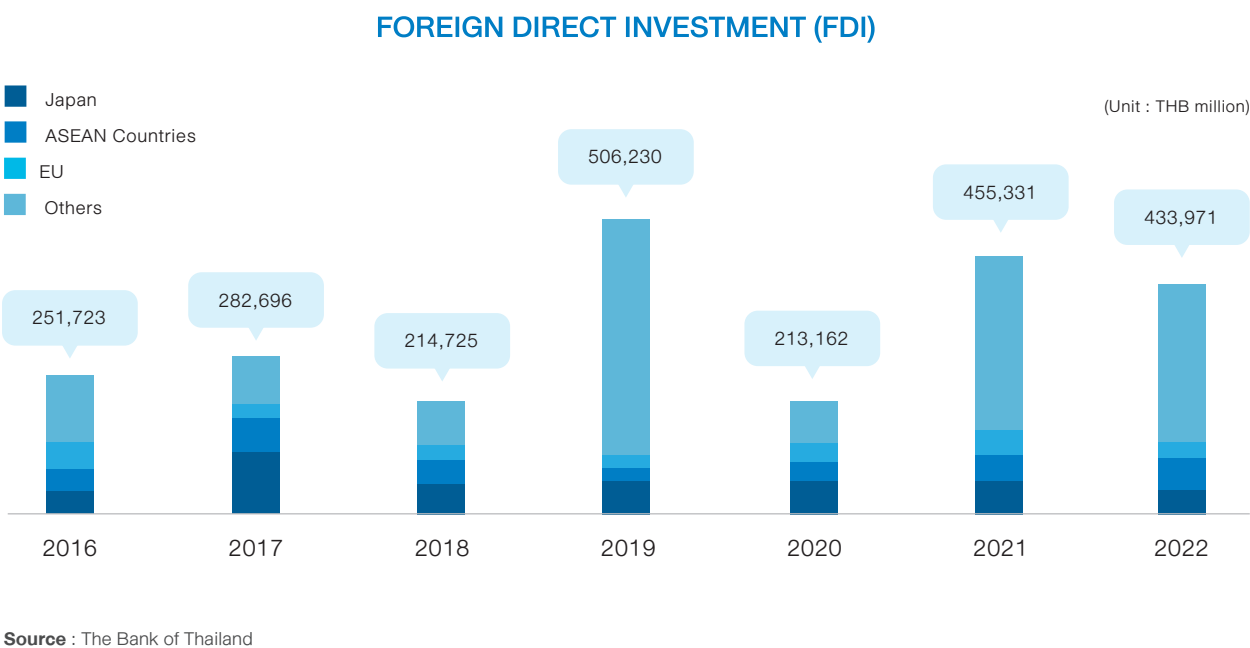
In addition, the water demand of the industrial sector has been changed from the general requirement to the more specific demand. Manufacturers with huge consumption requires specific water characteristics, as well as the requirement for wastewater reclamation. This will be factors to drive the Value-added water in coming years.

GDP GROWTH OVERALL AND IN THE EASTERN PART OF THAILAND



Source : Office of the National Economic and Social Development Council.
* (data as of Feb 2022)

Regarding the statistics of application for investment promotion of foreign countries in 2022, there were 1,070 projects applying for investment promotion. The value of investment is Baht 433,971 million. Compared to the year 2021, the number of projects increased by 37% but the value decreased by 5%



In 2022, the aggregate value of investment projects based on the applications submitted to the Board of Investment of Thailand (BOI) was THB 664.6 billion, increasing by 39% from 2021.

Applications for BOI investment promotional privileges mainly came from industrial operators in Rayong and Chonburi provinces, which accounted for 26 percent.

of total submitted applications and 52 percent. of the aggregate value of investment projects in 2022. That was due to Rayong and Chonburi are the strongholds of petrochemical and automotive businesses, which are the major industries in Thailand. However, there were 1,554 BOI-approved investment projects, which valued THB 618.6 billion accounted for 73 percent. of total submitted applications amount of 2,119 projects.



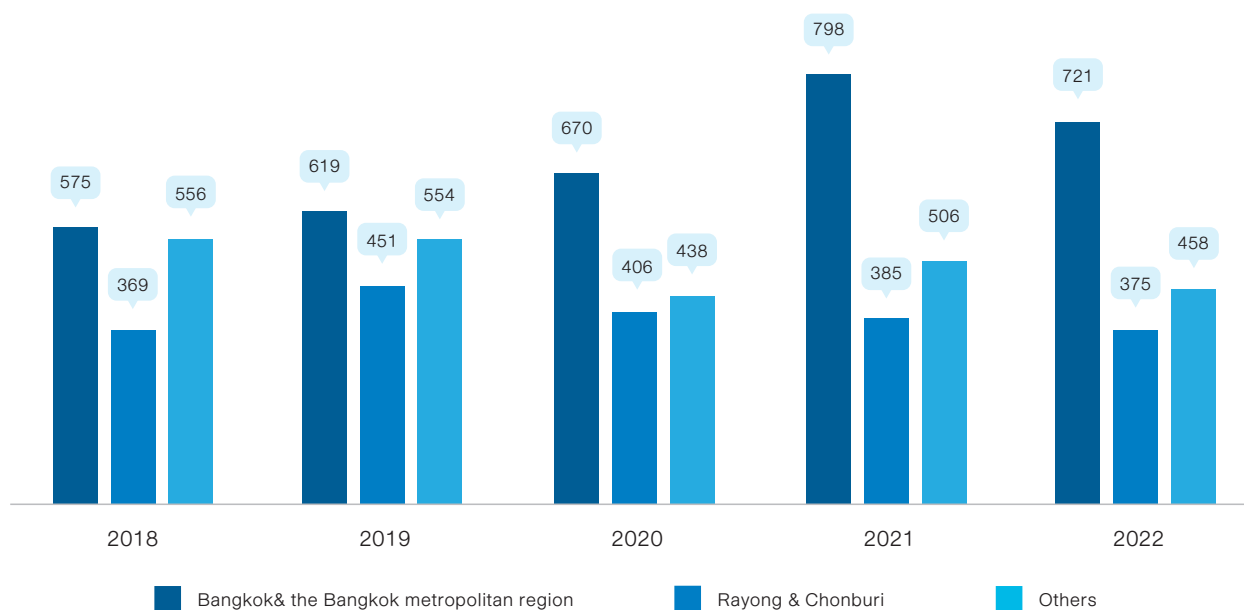
BOI-APPROVED INVESTMENT PROJECTS

BOI-approved applications	2016	2017	2018	2019	2020
Number of projects	1,469	1,500	1,501	1,572	1,554
Project value of submitted applications (THB billion)	549.5	447.4	361.4	511.9	618.6

Source : Office of BOI

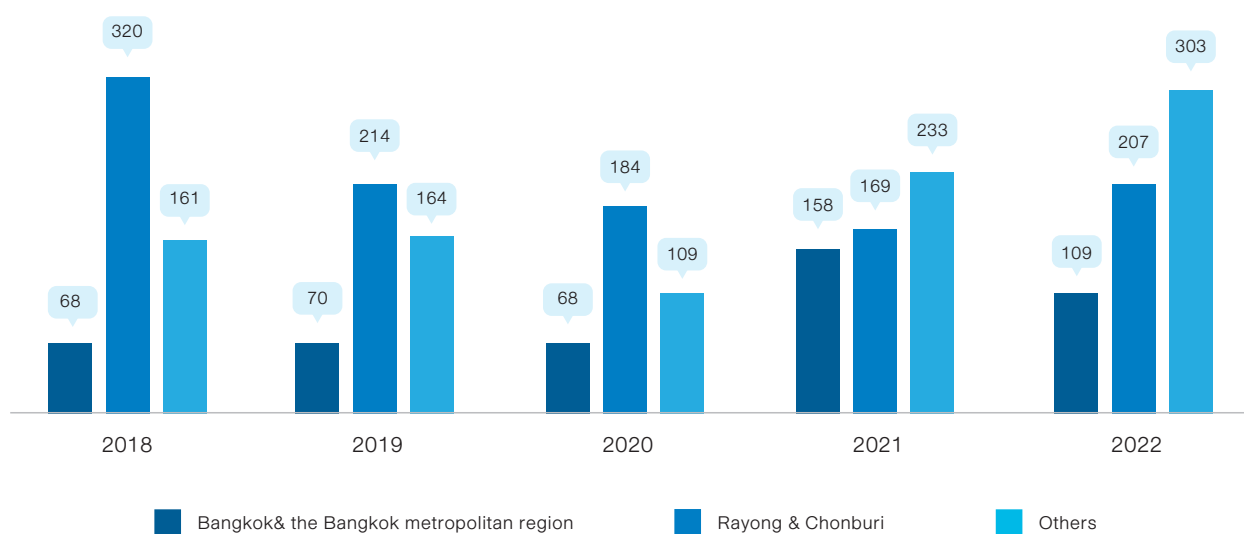
SITES OF BOI-APPROVED INVESTMENT PROJECTS

NUMBER OF BOI-APPROVED PROJECTS (PROJECTS)



Source : The Office of the Board of Investment

VALUE OF BOI-APPROVED PROJECTS (THB BILLION)



Source : The Office of the Board of Investment

(3) PRODUCTS AND SERVICES

1. INDUSTRIAL WATER PRODUCTION PLANTS AND WASTEWATER TREATMENT FACILITIES

Currently, the Company and its subsidiaries have 20 industrial water production plants and 13 wastewater treatment facilities located in 12 industrial estates and industrial lands operated by the WHAID Group including 11 industrial zones in Thailand and 1 industrial zone in Vietnam. The aggregate maximum industrial water production capacity is 375,576 cubic meters per day and the aggregate maximum wastewater treatment capacity is 135,456 cubic meters per day.

The summary of Industrial water production capacity and Wastewater treatment capacity.

Industrial estates and industrial lands	Location	Industrial water production capacity ^{1/} (cubic meters/day)	Wastewater treatment capacity ^{1/} (cubic meters/day)
WHA Eastern Industrial Estate (Map Ta Phut) ("WHA EIE")	Map Ta Phut, Rayong	159,400 ^{2/}	60,000
Eastern Seaboard Industrial Estate (Rayong) ("ESIE")	Pluakdaeng, Rayong	53,200 ^{3/}	- ^{4/}
WHA Eastern Seaboard Industrial Estate 1 ("WHA ESIE 1")	Pluakdaeng, Rayong	57,800 ^{5/}	18,200
WHA Chonburi Industrial Estate 1 ("WHA CIE 1")	Sriracha, Chonburi	18,000	8,400
WHA Chonburi Industrial Estate 2 ("WHA CIE 2")	Sriracha, Chonburi	6,000	1,600
WHA Saraburi Industrial Land ("WHA SIL")	Nongkae, Saraburi	30,576	14,976
WHA Rayong Industrial Land ("WHA RIL")	Bankhai, Rayong	14,400	12,480
WHA Eastern Seaboard Industrial Estate 2 ("WHA ESIE 2")	Pluakdaeng, Rayong	12,000	10,000
WHA Eastern Seaboard Industrial Estate 3 ("WHA ESIE 3")	Banbung/NongYai, Rayong	3,600	1,500
WHA Eastern Seaboard Industrial Estate 4 ("WHA ESIE 4")	Pluakdaeng, Rayong	3,600	1,500
WHA Industrial Zone 1 - Nghe An, Vietnam	Nghe An, Vietnam	12,000	3,200
Eastern Economic Corridor of Innovation ("EECI")	Wangchan, Rayong	-	600
WHA Rayong 36 Industrial Estate ("WHA Rayong 36")	Pananikom, Rayong	2,500	3,000
ASIA Industrial Estate (Maptaphud)	Banchang, Rayong	2,500 ^{6/}	-
Total		375,576	135,456

Notes :

- ^{1/} Most of the industrial water production plants and wastewater treatment plants in the above table are owned by the WHAID Group. On 30 March 2016, the Company and the WHAID Group entered into the Right Lease Agreement, which allows the Company to use those facilities to conduct its business for 50 years from the signing date.
- ^{2/} Two Demineralized Water production plants and Wastewater Reclamation plant with total capacity of 12,000 and 25,000 cubic meters per day.
- ^{3/} On 1 July 2008, the Company and Eastern Seaboard Industrial Estate (Rayong) Company Limited entered into the Right Lease Agreement for the operation and distribution of industrial water in ESIE, which has a term of 25 years ending on 30 June 2033.
- ^{4/} The Company has not leased the right to conduct wastewater treatment in ESIE (Rayong). However, the Company provides wastewater management services in ESIE (Rayong) having wastewater treatment capacity of 32,000 cubic meters per day.
- ^{5/} One Premium Clarified Water production plant with total capacity of 3,800 cubic meters per day.
- ^{6/} One Demineralized Water production plants with total capacity of 2,500 cubic meters per day. Which is a Wastewater Reclamation produce to Demineralized Water.

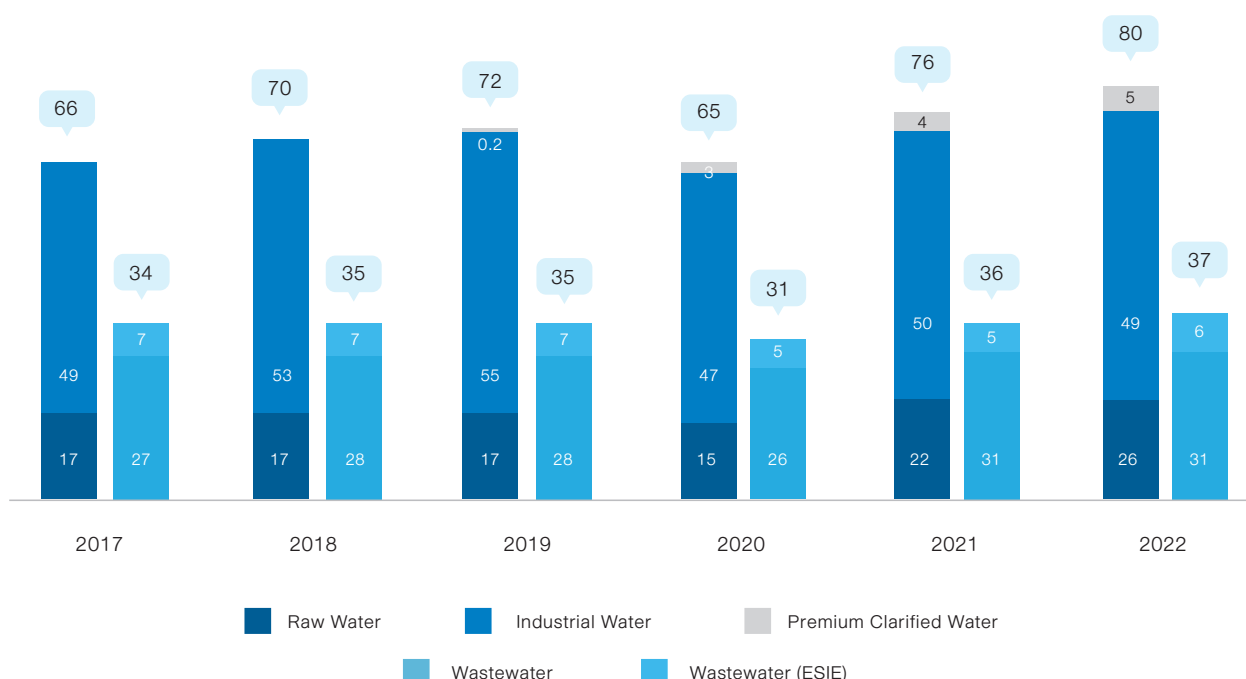
The operation and distribution of industrial water in ESIE (Rayong) is a joint investment and business arrangement agreed between WHAID and Siam Food Public Company Limited since 1994; there is no amendment in any agreement between the parties.

In addition to the procurement of raw water, operation and distribution of industrial water and provision of wastewater treatment services, the Company also

provides utility management service. The Company conducts wastewater management service in ESIE with wastewater treatment capacity of 32,000 cubic meters per day and utility management service in WHA LP 1, which are operation and distribution of industrial water having capacity of 120 cubic meters per day and wastewater treatment services. The Company earns service fee on a cost-plus basis for the services provided to the two aforementioned areas.

TOTAL SALES AND MANAGEMENT VOLUME IN THAILAND

(Unit : million cubic metres/year)



Regarding domestic utilities sales and management volume, in 2022 the industrial water sales volume in which the Company takes a lease right from WHAID Group was 49 million cubic meters, 1% decrease from 2021. The wastewater treatment volume in all industrial estates in which the Company takes the right to operate from WHAID Group was 37 million cubic meters, a 2% increase from 2021. The raw water procurement and

distribution quantity in areas of WHAID Group was 26 million cubic meters, a 15% increase from 2021.

For international utilities, the Company expanded operation in 2019 in Vietnam to both by providing raw water services to WHA's industrial areas and by investing in two tap water companies.



WHAUP provided water sales and wastewater treatment services to customers in WHA Industrial Zone 1 — Nghe An in 2019, WHAUP has production capacity of 12,000 cubic meters per day and total wastewater management capacity of 3,200 cubic meters per day.

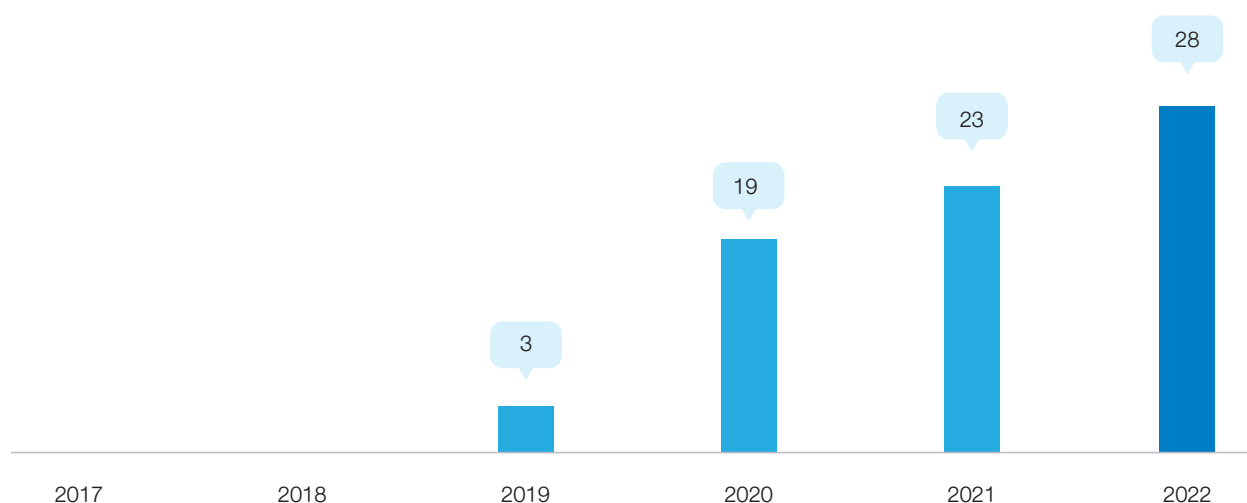
Besides, the Company acquired and holds 47% and 34% stake in two tap water companies, namely Cua Lo Water Supply Co- the producer and distributor of

tap water in Nghe An and Duong River Surface Water Plant Co (SDWTP) - a leading tap water producer in Hanoi. Both projects have total capacity according to the shareholding equity of 23,000 and 300,000 cubic meters per day.

In 2022, WHAUP had total sales from Vietnam projects of 77,914 cubic meters per day or 28 million cubic meters per year according to shareholding equity.

TOTAL SALES VOLUME IN VIETNAM ACCORDING TO SHAREHOLDING EQUITY

(UNIT : MILLION CUBIC METRES/YEAR)



The Company has a policy to adequately provide utility services to meet to the increase of customer's demand and the expansion of industrial areas where the Company operates in. If the customer demand or the expansion of industrial areas reaches of 70 percent of its production capacity or of its storage capacity of the system, which is also in line with the IEAT's criteria, the Company will consider increasing its service capacities by either expanding the current production capacity at its existing plants or establishing new facilities to ensure its adequate services.

2. RAW MATERIAL PROCUREMENT

The key raw materials are as follows.

(1) RAW WATER

Raw water is the key raw material for the industrial water production of the Company and its subsidiaries. The Company and its subsidiaries can procure raw water from 4 sources as follows :

- (1) Eastern Water Resources Development and Management Public Company Limited ("East Water"), a major concession company in the Eastern region which provides services covering Chonburi, Rayong and Chachoengsao provinces
- (2) RID The Company currently purchases raw water from the RID through WHA Saraburi Industrial Land Company Limited, which is a company in the WHAID group. However, the Company is in the process of purchasing raw water with the RID directly.
- (3) WHAID Group Water resources include water from natural ponds inside the WHAID area that have been prepared to alleviate operators' concerns about water shortage. Additionally, they are intended for drainage and the prevention of flooding within the industrial estate.
- (4) Others, such as the water from private water provider or the wastewater reclamation from other industrial estate

The raw water sources are available for each industrial estate and each industrial land as follows :

Industrial estates and industrial lands	Raw Water Resources			
	East Water	RID	WHAID Group	Others
WHA Eastern Industrial Estate (Map Ta Phut) ("WHA EIE")	✓			
Eastern Seaboard Industrial Estate (Rayong) ("ESIE")	✓		✓	
WHA Eastern Seaboard Industrial Estate 1 ("WHA ESIE 1")	✓		✓	
WHA Chonburi Industrial Estate 1 ("WHA CIE 1")	✓		✓	
WHA Chonburi Industrial Estate 2 ("WHA CIE 2")	✓			
WHA Saraburi Industrial Land ("WHA SIL")		✓		
WHA Rayong Industrial Land ("WHA RIL")	✓		✓	
WHA Eastern Seaboard Industrial Estate 2 ("WHA ESIE 2")	✓		✓	
WHA Eastern Seaboard Industrial Estate 3 ("WHA ESIE 3")	✓			
WHA Eastern Seaboard Industrial Estate 4 ("WHA ESIE 4")	✓			

Industrial estates and industrial lands	Raw Water Resources			Others
	East Water	RID	WHAID Group	
WHA Rayong 36 Industrial Estate ("WHA Rayong 36")			✓	
ASIA Industrial Estate (Maptaphud)				✓
WHA Industrial Zone 1 – Nghe An, Vietnam	Use tap water from the Company's subsidiaries			

However, in circumstances when raw water purchases are mutually beneficial, the WHAID group, as the industrial estate developer, may act as an intermediary.

In this regard, the Company and its subsidiaries had raw water purchase costs of 65.4% and 61.8% of the total costs for the year 2021 and 2022.

The proportion of raw water that the Company obtained from various sources during the year 2021 – 2022 is as follows :

Raw Water Resource	As of 31 December					
	2020		2021		2022	
	Million m3	Percentage	Million m3	Percentage	Million m3	Percentage
East Water	49.1	78.8	56.8	79.7	60.0	80.7
RID	7.2	11.6	7.3	10.2	5.1	6.9
WHAID Group's natural water resources	6.0	9.6	7.2	10.1	9.2	12.4
Total	62.3	100.0	71.2	100.0	74.3	100.0

(2) ELECTRICITY

Electricity is the main cost of raw water distribution, industrial water production, and wastewater treatment of the Company and its subsidiaries. The Company and its subsidiaries purchase electricity directly from the Provincial Electricity Authority and private power plants.

In this regard, the Company and its subsidiaries recorded electricity cost accounting for 7.9% and 8.5% of the total costs for the year 2021 and 2022.

(3) CHEMICALS

The main chemicals used in industrial water production and distribution and wastewater treatment consist of Poly Aluminum Chloride, Polymer, Lime, and Chlorine. The Company and its subsidiaries purchase chemicals from various local distributors. Additionally, the Company has a procurement policy that determines a supplier's conditions in terms of pricing, quality, delivery capability, and service.

In this regard, the Company and its subsidiaries had chemical costs accounted for 4.1% and 4.7% of the total costs for the year 2021 and 2022.

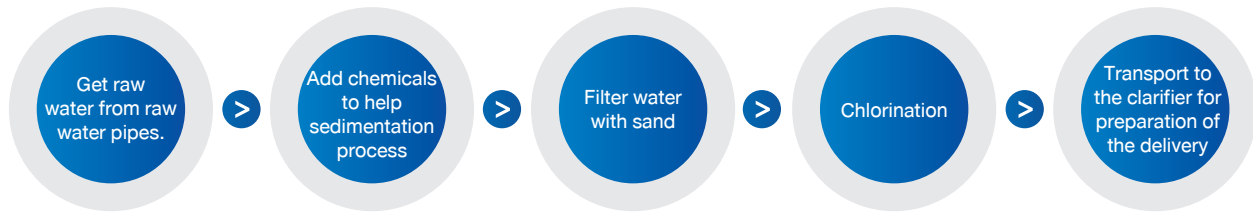
(4) MAINTENANCE

The Company and its subsidiaries employ a team that specializes in the maintenance of production systems, water transportation systems, and production or wastewater treatment equipment. However, if the Company's water production or transportation system has sustained significant damage, the Company may contract with an external repairer, depending on the nature of the repair and the appropriate cost.

In this regard, the Company and its subsidiaries have maintenance costs accounted for 3.9% and 4.0% of the costs for the year 2021 and 2022.

3. DETAILS OF THE WATER PRODUCTION AND DISTRIBUTION AND WASTEWATER MANAGEMENT PROCESS

(1) INDUSTRIAL WATER PRODUCTION INCLUDES PROCESS WATER AND CLARIFIED WATER



Step 1

Raw water distributors deliver raw water to raw water receiving locations. The Company then transports raw water to its water production plant via pipeline. The Company obtains raw water for its production from (1) raw water distributors, which are currently the East Water and the RID. The Company will utilize a metering system to measure the quantity of water from each source.

Step 2

Pour raw water into the sedimentation tank and add chemicals such as Poly Aluminum Chloride, Polymer, Lime, and Chlorine to aid in settling. Following the sedimentation process, the sludge-free water is routed to the sand filter tank, while the sludge is dewatered and transferred to the sludge pressing plant, where it is further processed by landfill specialists.

Step 3

Filter the water once more with sand to remove the fine sediment. The water that has passed through the sand

has a low turbidity. The Company will replace the sand used as a filter every 3-4 years.

Step 4

Add chlorine to the water for disinfection as chlorine is easy to control and able to kill almost all types of germs and help eliminate odor and color. However, some of the Company's customers do not want chlorinated water since it will corrode the machinery. The Company therefore offers such customers clarified water products.

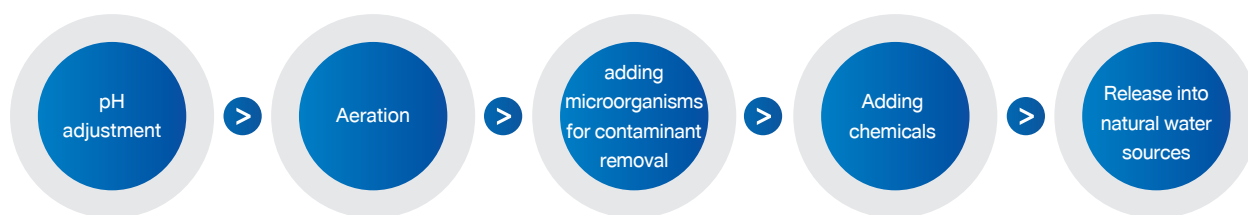
Step 5

Prepare processed water for delivery to clients by storing it in wells or cement tanks. When a client demands water, the system delivers it via pipes to the customer.

Additionally, the Company provides raw water supply services to customers. The Company installs raw water pipes and associated equipment from the raw water source or the raw water supplier's main pipe to customers who require raw water.



(2) WASTEWATER MANAGEMENT



The Company's wastewater treatment procedure is biological wastewater treatment, which employs microorganisms to remove contaminants such as organic matter, nitrogen, and phosphorus from wastewater.

Step 1

Adjust the pH of the wastewater to be treated, as each wastewater treatment method requires a different pH of water.

Step 2

Aeration enables microorganisms to eliminate contaminants more effectively from the wastewater and helps the sedimentation process.

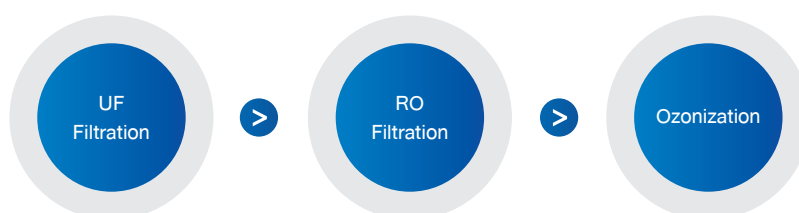
Step 3

Chlorination before releasing treated water into natural

water sources - The Company will press the sludge in its sludge dewatering plant and then landfill it with the assistance of specialists.

The Company has four methods for treating wastewater, each of which is based on similar principles to those described above but may be somewhat modified to meet the characteristics and requirements of certain customer groups in that area. The Company treats biological wastewater in four methods : (1) Rotation Biological Contractor (2) Activated Sludge (3) Aerated Lagoon and (4) Wet Land. Except for Wet Land wastewater treatment, each method is based on the same principle : aeration and the use of microorganisms to remove contaminants. However, for Wet Land wastewater treatment, the Company will tailor the system to the area's particular characteristics.

(3) WASTEWATER RECLAMATION



Step 1

Ultra filtration : To remove impurities from treated wastewater. It can filter almost all impurities except TDS (Total Dissolved Solids), which must pass through the RO membrane in the next step.

Step 2

Reverse Osmosis membrane filtration : To filter all kinds of residues from the water, especially TDS. This processed water is of very high purity.

Step 3

Ozonization : Although RO water is exceptionally clean and no germs can travel through the RO membrane, final ozone treatment before to shipping can boost confidence and minimize residual odor and color.

(4) DEMINERALIZED WATER



Step 1

Currently, the Company uses RO water derived from wastewater reclamation as starting water in the demineralized water process. The first stage is to adjust the pH to a level that enables the separation of impurity ions, allowing to produce the purest water.

Step 2

Mixed bed resin is a process where water is passed through an ion-exchange resin to remove as much ion as possible.

Step 3

Polisher is the final stage of ion separation before water is shipped to customers, ensuring that the water fulfills the agreed-upon quality.

water resources, the Company inspects the water's quality to ensure that it complies with applicable laws and regulations. The WHAID group has invested in advanced equipment to continuously monitor water quality, such as an Online Monitoring System (EMC2 System), which enables engineers to monitor water quality and efficiency of the wastewater management system. Additionally, the Company has a comprehensive water management system in place that maximizes the benefits of water reuse.

Additionally, the Company is ISO 14000 : 2015 certified for environmental responsibilities. The Company completely adheres to the law and has never been involved in any disputes or lawsuits over environmental impact, nor has it ever been cautioned or fined by any government agency for failing to comply with the law.

4. ENVIRONMENTAL IMPACT

focuses on potential environmental impacts of processes such as sludge and treated water. The Company has adhered fully to the rules and operating procedures. To minimize and manage environmental impacts, the Company has taken the following measures :

- (1) Sludge The Company manages the sludge by employing specialized disposal operators who are legally licensed to transport it to a landfill.
- (2) Treated Water Before discharging water into natural

(4) ASSETS USED IN BUSINESS OPERATIONS

Details of Assets Used in Business Operation are shown in 56-1 One Report in Attachment 4 Assets Used in Business Operations and Details of Asset Valuation.

(5) UNDER-CONSTRUCTION PROJECTS.

- None -



2. POWER BUSINESS

(1) NATURE OF PRODUCTS OR SERVICES AND DEVELOPMENT OF BUSINESS INNOVATION

WHAUP Group conducts power business itself or by holding equity in other power generating and distribution companies, both domestically and abroad. The 80 commercially operating power plants in which the WHAUP Group invested have an aggregate installed power generating capacity of around 2,674 MW, or equal to a capacity in proportion to equity of around

683 MW -including Solar projects with capacity of 94 MW and Solar projects under construction with capacity of 39 MW. Natural Gas Distribution Business, the 2 commercially operating power plants in which the WHAUP Group invested have the distribution capacity of 3,000,000 million BTU per year or equal to a capacity in proportion to equity of 1,050,000 million BTU per year.

This table summarizes the power plant projects.

Power plant	Location	Type of power	Category of Plant	Equity holding (percent.)	Installed power generating capacity			Capacity in proportion to equity		Commercial Operation Date
1) Information about the commercially operating power plants in which the WHAUP Group has investment										
Joint venture with the GPSC Group										
Gheco-I	Map Ta Phut Industrial Estate	Coal	IPP	35.00%	Power	660	MW	231	MW	August 2012
Glow IPP	WHA CIE 1	Gas-fired cogeneration	IPP	5.00%	Power	713	MW	36	MW	January 2003
Houay Ho Power	Lao People's Democratic Republic	Hydro power	IPP	12.75%	Power	152	MW	19	MW	September 1999
Joint venture with the Gulf Group										
Gulf JP NLL	WHA RIL	Gas-fired cogeneration	SPP	25.01%	Power	123	MW	31	MW	May 2013
					Steam	8	TPH	2	TPH	
					Chilled water	4,600	RT	1,150	RT	
Gulf Solar KKS	WHA LP1	Solar power	VSPP	25.01%	Power	0.25	MW	0.06	MW	December 2014
Gulf Solar BV	WHA CIE	Solar power	VSPP	25.01%	Power	0.13	MW	0.03	MW	June 2014
Gulf Solar TS1	WHA ESIE 1	Solar power	VSPP	25.01%	Power	0.13	MW	0.03	MW	August 2014
Gulf Solar TS2	ESIE	Solar power	VSPP	25.01%	Power	0.09	MW	0.02	MW	January 2015
Joint venture with the Gunkul Group										
WHA Gunkul Green Solar Roof 1	WHA Mega Logistics Centre, Bangna-Trad KM.18	Solar power	VSPP	74.99%	Power	0.64	MW	0.48	MW	April 2014
WHA Gunkul Green Solar Roof 3	WHA Mega Logistics Centre, Bangna-Trad KM.18	Solar power	VSPP	74.99%	Power	0.83	MW	0.62	MW	April 2014
WHA Gunkul Green Solar Roof 6	WHA Mega Logistics Centre, Bangna-Trad KM.18	Solar power	VSPP	74.99%	Power	0.83	MW	0.62	MW	April 2014
WHA Gunkul Green Solar Roof 17	WHA Mega Logistics Centre, Wangnoi 61, Ayutthaya	Solar power	VSPP	74.99%	Power	1.00	MW	0.73	MW	July 2014

Power plant	Location	Type of power	Category of Plant	Equity holding (percent.)	Installed power generating capacity			Capacity in proportion to equity		Commercial Operation Date
Joint venture in power plant projects with B.Grimm Power Group										
BPWHA-1	WHA CIE 1	Gas-fired cogeneration	SPP	25.01%	Power	130	MW	33	MW	November 2016
					Steam	30	TPH	8	TPH	
Joint venture with Gulf MP Company Limited										
Gulf VTP	ESIE	Gas-fired cogeneration	SPP	25.01%	Power	137	MW	34	MW	May 2017
					Steam	20	TPH	5	TPH	
Gulf TS1	ESIE	Gas-fired cogeneration	SPP	25.01%	Power	134	MW	34	MW	June 2017
					Steam	30	TPH	8	TPH	
Gulf TS2	ESIE	Gas-fired cogeneration	SPP	25.01%	Power	134	MW	34	MW	September 2017
					Steam	30	TPH	8	TPH	
Gulf TS3	WHA ESIE 1	Gas-fired cogeneration	SPP	25.01%	Power	130	MW	32	MW	November 2017
					Steam	25	TPH	6	TPH	
Gulf TS4	WHA ESIE 1	Gas-fired cogeneration	SPP	25.01%	Power	130	MW	32	MW	January 2018
					Steam	25	TPH	6	TPH	
Gulf NLL 2	WHA RIL	Gas-fired cogeneration	SPP	25.01%	Power	127	MW	32	MW	January 2019
					Steam	10	TPH	3	TPH	
Joint venture with GPSC Group and SUEZ										
CCE	WHA CIE	Waste-to-Energy	VSPP	33.33%	Power	8.6	MW	2.9	MW	November 2019
2) Information about the commercially operating power plants by WHAUP Group (Sole Proprietorship)										
Solar power plants	-	Solar Power	Private PPA	100%	Power	94	MW	94	MW	May 2018-December 2022
Total Combined 1) and 2)					Power	2,677	MW	644	MW	
Consisted of : Commercially operating power plants in terms of JV and WHAUP sole proprietorship					Steam	148	TPH	38	TPH	
					Chilled water	4,600	RT	1,150	RT	

COMMERCIALLY OPERATING POWER PLANTS IN WHICH THE WHAUP GROUP HAS INVESTMENT

1. GHECO-I COMPANY LIMITED (GHECO-I)

Gheco-I Power Plant is a coal-fired power plant in Map Ta Phut Industrial Estate, Rayong province. This power plant has a installed power generating capacity of 660MW under an IPP power purchase agreement with EGAT. Total electricity generated from this power plant is sold to EGAT for 25 years starting from the COD in August 2012.

The Company holds equity in Gheco-I Power Plant through WHA Energy 2 Company Limited, a subsidiary in which the Company has a stake of 99.99 percent. WHA Energy 2 Company Limited holds 35 percent of total issued and paid-up shares in Gheco-I Power Plant. The remaining 65 percent of its total capital is held by the GPSC Group.

2. GLOW IPP COMPANY LIMITED (GLOW IPP)

Glow IPP Power Plant is a gas-fired power plant in WHA CIE 1, Chonburi province. This power plant has a installed power generating capacity of 713MW under an IPP power purchase agreement with EGAT. Total electricity generated from this power plant is sold to EGAT for 25 years starting from the COD in January 2003.

WHA Energy 2 Company Limited, a subsidiary in which the Company has a stake of 99.99 percent, holds 5 percent of total issued and paid-up shares in Glow IPP. The remaining 95 percent of total capital in Glow IPP is held by the GPSC Group.

3. HOUAY HO POWER COMPANY LIMITED (HHPC)

HHPC, a company registered in Lao People's Democratic Republic, was established with the objectives to own and operate a hydro power plant, Houay Ho, in Attapeu province in the southern part of Laos. Houay Ho Power Plant has a installed power generating capacity of 152 MW. HHPC has obtained a 30-year concession on a

build-operate-transfer basis from the Government of Laos. This power plant became commercially operating in September 1999 with a installed power generating capacity to sell 126MW of electricity to EGAT and 2 MW to Electricite du Laos (EDL) for 30 years from the commercial operation date. However, the amount of electricity to be sold to EGAT in each year will be based on the quantity of water storage of the power plant. A monthly report on the estimated power generating quantity will be provided to EGAT.

The Company directly holds 51 percent of the total issued and paid-up shares in Houay Ho Thai Company Limited (HHTC), with the remaining shares of HHTC being directly held by the GPSC Group. HHTC directly holds 25 percent of the total issued and paid-up shares in HHPC. Effectively, the Company owns 12.75 percent shareholding in HHPC, while the GPSC Group effectively owns (both directly and indirectly) 67.25 percent shareholding in HHPC, and EDL-Generation Public Company Limited directly owns 20 percent shareholding in HHPC.

4. GULF JP NLL COMPANY LIMITED (GULF JP NLL)

Gulf JP NLL owns and operates SPP power plant in WHA RIL, Rayong province. The SPP power plant is a gas-fired power plant having a installed power generating capacity of 123MW. It sells 90MW of electricity to EGAT under an SPP power purchase agreement on a firm commitment basis, which has a term of 25 years from the COD in May 2013. This power plant also has an agreement to sell steam and chilled water to industrial customers in WHA RIL.

The Company holds equity in Gulf JP NLL power plant project through WHA Energy Company Limited, a subsidiary in which the Company has a stake of 99.99 percent. WHA Energy 2 Company Limited holds 25.01 percent of the total issued and paid-up shares in Gulf JP NLL. The remaining 74.99 percent of its total capital is held by the Gulf Group.

5. GULF SOLAR POWER PLANTS

Gulf Solar Company Limited (Gulf Solar) owns and operates four solar rooftop VSPP power plants having a installed power generating capacity of 0.6MW, which is totally distributed to PEA and the Metropolitan Electricity Authority (MEA). The four power plants consist of the following companies :

1. Gulf Solar KKS Company Limited in WHA LP 1, which has a installed power generating capacity of 0.25MW and became commercially operational in December 2014;
2. Gulf Solar BV Company Limited in WHA CIE 1, which has a installed power generating capacity of 0.13MW and became commercially operational in June 2014;
3. Gulf Solar TS1 Company Limited in WHA ESIE 1, which has a installed power generating capacity of 0.13MW and became commercially operational in August 2014; and
4. Gulf Solar TS2 Company Limited in ESIE, which has a installed power generating capacity of 0.09MW and became commercially operational in January 2015.

WHA Solar Company Limited, a subsidiary in which the Company has a stake of 99.99 percent, holds 25.01 percent of the total issued and paid-up shares in Gulf Solar. The remaining 74.99 percent of its total capital is held by the Gulf Group.

6. WHA GUNKUL SOLAR POWER PLANTS

The WHA Gunkul Group owns and operates four solar rooftop VSPP power plants having a installed power generating capacity of 3.3MW, divided into 2.3MW sold to PEA and 1.0 MW to MEA. The four power plants consist of the following companies :

1. WHA Gunkul Green Solar Roof 1 Company Limited in WHA Mega Logistics Centre, Bangna-Trad Road KM.18, Samutprakan province, which has a installed power generating capacity of 0.64MW and became commercially operational in April 2014;

2. WHA Gunkul Green Solar Roof 3 Company Limited in WHA Mega Logistics Centre, Bangna-Trad Road KM.18, Samutprakan province, which has a installed power generating capacity of 0.83MW and became commercially operational in April 2014;
3. WHA Gunkul Green Solar Roof 6 Company Limited in WHA Mega Logistics Centre, Bangna-Trad Road KM.18, Samutprakan province, which has a installed power generating capacity of 0.83MW and became commercially operational in April 2014;
4. WHA Gunkul Green Solar Roof 17 Company Limited in WHA Mega Logistics Centre, Wangnoi 61, Phra Nakhon Sri Ayutthaya province, which has a installed power generating capacity of 1.0MW and became commercially operational in July 2014.

WHA Solar Company Limited, a subsidiary in which the Company has a stake of 99.99 percent, holds 74.99 percent of total issued and paid-up shares in each of the above companies. The remaining 25.01 percent of total capital in those companies is held by the Gunkul Group.

7. B.GRIMM POWER (WHA) 1 COMPANY LIMITED (BPWHA-1)

BPWHA-1 owns and operates BPWHA-1 Power Plant in WHA CIE 1, Chonburi province. BPWHA-1 Power Plant is a gas-fired SPP power plant having a installed power generating capacity of 130MW. This power plant sells 90MW of electricity to EGAT under a power purchase agreement on a firm commitment basis, which has a term of 25 years from the COD in November 2016. It also has an agreement to sell electricity to industrial customers in WHA CIE 1.

WHA Energy Company Limited, a subsidiary in which the Company has a stake of 99.99 percent., holds 25.01 percent of total issued and paid-up shares in BPWHA-1. The remaining 74.99 percent of its total capital is held by the B.Grimm Power Group.

8. GAS-FIRED POWER PLANTS PROJECT A JOINT VENTURE WITH GULF MP COMPANY LIMITED

The WHAUP Group and Gulf MP Company Limited jointly own 4 SPP gas-fired power plants with a firm basis power purchase agreement, consisting of the following companies :

1. Gulf VTP Company Limited (Gulf VTP), which operates Gulf VTP Power Plant in ESIE, Pluakdaeng sub-district, Rayong province having an installed power generating capacity of 137MW and an installed steam generating capacity of 20 Ton/hour. This power plant became commercially operational in May 2017.
2. Gulf TS1 Company Limited (Gulf TS1), which operates Gulf TS1 Power Plant in ESIE, Pluakdaeng sub-district, Rayong province having an installed power generating capacity of 134MW and an installed steam generating capacity of 30 Ton/hour. This power plant became commercially operational in July 2017.
3. Gulf TS2 Company Limited (Gulf TS2), which operates Gulf TS2 Power Plant in ESIE, Pluakdaeng sub-district, Rayong province having an installed power generating capacity of 134MW and an installed steam generating capacity of 30 Ton/hour. This power plant became commercially operational in September 2017.
4. Gulf TS3 Company Limited (Gulf TS3), which operates Gulf TS3 Power Plant in WHA ESIE 1, Pluakdaeng sub-district, Rayong province having an installed power generating capacity of 130MW and an installed steam generating capacity of 25 Ton/hour. This power plant became commercially operational in November 2017.
5. Gulf TS4 Company Limited (Gulf TS4), which operates Gulf TS4 Power Plant in WHA ESIE 1, Pluakdaeng sub-district, Rayong province having an installed power generating capacity of 130MW and an installed steam generating capacity of 25 Ton/hour. This power plant became commercially operational in January 2018.
6. Gulf NLL2 Company Limited (Gulf NLL2), which operates Gulf NLL Power Plant in WHA RIL, Ban Khai District, Rayong Province having an installed power generating capacity of 127MW and an

installed steam generating capacity of 10 Ton/hour. This power plant became commercially operational in January 2019.

WHA Energy Company Limited, a subsidiary in which the Company has a stake of 99.99 percent, holds 25.01 percent of the total issued and paid-up shares in each of the above power plant companies. The remaining 74.99 percent of their total capital is held by Gulf MP Company Limited.

9. INDUSTRIAL WASTE ENERGY PROJECTS A JOINT VENTURE WITH GLOW IPP 3 COMPANY LIMITED AND VEOLIA ENVIRONMENTAL SERVICES (THAILAND) COMPANY LIMITED (FORMER NAME SUEZ SERVICES (THAILAND) COMPANY LIMITED)

Chonburi Clean Energy Plant is a industrial waste to energy power plant in WHA CIE 1, Chonburi province. This power plant has an installed power generating capacity of 8.6 MW under. This power plant is scheduled to start the commercial operations in November 2019.

Chonburi Clean Energy Company Limited is a subsidiary of Eastern Seaboard Clean Energy Company Limited, a joint venture between Glow IPP 3 Company Limited (a subsidiary of Global Power Synergy PCL.) with WHA Energy Company Limited (a subsidiary of WHA Utilities and Power Plc.) and Veolia Environmental Services (Thailand) Company Limited Limited (a subsidiary of Suez (Southeast Asia) Limited) for development of industrial waste energy projects. Each party owns an equal proportion of shares.

10. NATURAL GAS DISTRIBUTION, A JOINT VENTURE WITH GULF ENERGY DEVELOPMENT PLC AND MITG (THAILAND) COMPANY LIMITED

WHA Eastern Seaboard NGD 2 (WHANGD2) which operates and distributes natural gas to industrial customers in WHA Eastern Seaboard Industrial Estate 2 and WHA Eastern Seaboard NGD 4 (WHANGD4) which operates and distributes natural gas to industrial customers in WHA Eastern Seaboard Industrial Estate 4, which has started the commercial operation on June 2019.

COMMERCIALLY OPERATING POWER PLANTS IN WHICH WHAUP GROUP HAS DEVELOPED

1. SOLAR POWER PLANT PROJECT

The Company has operated Solar Rooftop plant project to distribute power to factories and warehouses located both in industrial areas and logistic parks of the WHA Group and external areas, which has started commercial power generation in a total volume of 94 MW.

POWER PLANTS UNDER CONSTRUCTION IN WHICH WHAUP GROUP HAS DEVELOPED

1. SOLAR POWER PLANTS PROJECT

The Company develops solar power plants to sell electricity to industrial customers both inside the WHAID's industrial area and outside which are under construction having total installed power generating capacity of 39 MW.

INNOVATION DEVELOPMENT BY INTRODUCE INNOVATION AND SMART SOLUTIONS FOR BETTER ENERGY MANAGEMENT IN INDUSTRIAL AREAS.

The Company is currently studying the smart energy innovations. These include peer-to-peer energy trading, a new service fee structure through net metering and net billing, an energy storage, and microgrid system in the industrial estates of the WHA Group. The goal is to support the transformation of the energy industry to decentralize power generation and power generation from clean energy. This will help entrepreneurs in industrial estates reduce their costs and improve their energy stability, while also expanding investment opportunities

for the Company. The Company has partnered with the Provincial Electricity Authority and technology partners to study and develop a blockchain-based peer-to-peer energy trading system. The project is currently a part of the Energy Regulatory Commission's sand box program. The operation area is at Eastern Seaboard Industrial Estate (Rayong), which is the first industrial estate that connects the peer-to-peer electricity trading system with the Provincial Electricity Authority.

Additionally, the Company has studied the expansion of the solar energy business by developing an energy storage system. This is a key device that will be a game changer in the future energy market. The Company has initiated an 820 KWp Solar Rooftop with a 550 KWh Battery Energy Storage System (BESS) to supply electricity to utilities in the Eastern Seaboard Industrial Estate (Rayong). This project started commercial operation date (COD) in November 2021 and has contributed to energy cost savings of roughly 4 million Baht per year and CO2 offset emissions reductions of 10,500 tons.

For energy innovation projects in which the Company is studying, the Company has collaborated with business partners. As the Company is responsible for project management, customer development and processes with government agencies, the Company incur no expenses in this section. Business partners are responsible for research and technology development, so this portion of expenses belongs to business partners.





(2) MARKET AND COMPETITION

The power business in Thailand is an infrastructure service under the supervision and regulation of the Ministry of Energy, the ERC and the National Energy Policy Board (NEPB), which are in charge of the stability and sustainability of the national power utility. Originally, EGAT was solely responsible for generating power to support nationwide consumption. After demand for electricity sharply rose as a result of economic expansion and population increase, the governments has therefore the participation of private sector in the power generation business with a view to mitigating EGAT's investment burden in order to respond growing demand for electricity. Starting from 1992, the government launched a policy encouraging the private sector's participation in power generation and invited it to bid for the construction of power plants. Such policy inaugurated a new role of IPPs and SPPs in the country's power generation business since 1994. As there is also great support for alternative energy power generation, VSPPs are now taking an active role in the country's power industry. In the past, the cost of solar energy has been rapidly decreased, causing many entrepreneurs to invest in installing solar power systems for their own use or selling to users in industrial areas or other large enterprises. Due to the face that, it can produce energy at a lower average cost per unit than buying power from Provincial Electricity Authority (PEA) or Metropolitan Electricity Authority (MEA).

WHAUP's competitive advantages are as follows :

1. HIGH AND STEADY GROWTH BUSINESS LOCATION

WHAUP's key business and market are based in the Easter Economic Corridor (EEC) area where the country's largest industries are located and is area of highest investment intensity

2. STRENGTH FROM RELATIONSHIP WITH WHAID AND WHA GROUPS

WHAUP receives continuous support from WHAID and WHA Groups - WHAUP's main shareholders, especially WHAID Group which has developed 11 industrial estates with WHAUP as exclusive provider of utility services and where most of WHAUP's power plants and energy projects are located.

WHAUP benefits from WHAID's steady expansion, with its business opportunities growing with WHAID and WHA Groups business, such as new power plants investment opportunities or new industrial customers for solar rooftop installation.

3. CUSTOMERS' BUSINESS AND FINANCIAL STRENGTH

WHAUP's power business customers consist of EGAT, PEA, MEA or large industrial users that off-take WHAUP's products (electricity, steam and natural gas) over a long-term contract, giving WHAUP's power business high stability and potential for steady long-term growth.

(3) PRODUCTS AND SERVICES

1. DELIVER CLEAN ENERGY AT COMPETITIVE PRICE

With technology competent in energy business, efficient operation management and choosing an appropriate fuel will enable the company to generate and distribute energy to industrial customers at a cheaper and reasonable price than competitors which helps reduce production costs for customers.

2. INCORPORATING VARIOUS INNOVATIONS AND SMART SOLUTIONS TO MANAGE ENERGY IN INDUSTRIAL AREAS.

The Company is currently studying and developing various energy-related innovations, including the new structure of the electricity market, such as Peer-to-Peer Energy Trading, studying new models of service rates, such as Net Metering and Net Billing, exploring new technologies such as Energy Storage, studying the management and operation of new electricity systems such as Microgrid, etc., in the industrial estate areas of the WHAID group. The Company aim is to support the changing trends of the energy industry towards distributed electricity generation and production of clean energy. This will help reduce costs and increase energy stability for entrepreneurs in the industrial estate, as well as create investment opportunities for the Company.

3. FOCUS ON DOMESTIC AND OVERSEA

The Company plans to expand its power business as mentioned above to foreign market, particularly in countries with high growth in population, economic and demand for power and consider investment risks that are suitable for returns. Particularly Vietnam, are viewed as potential countries. The Company currently is in process of studying the investment on Renewable Energy.

4. STRATEGIES FOR THE INDUSTRY OF THE FUTURE (NEW S-CURVE)

WHAUP Group recognizes the importance of technological dynamics as a factor that can have a global impact on various industrial sectors. To become a leader in integrated utilities and energy in industrial estates, the Company is examining the possibility of introducing new technologies to develop and extend into new businesses, such as the Battery Energy Storage System (BESS), as well as the possibility of the carbon credit market and merchant power market, to further develop innovation for the greatest benefit of business operations, including those involved in all dimensions.

(4) ASSETS USED IN BUSINESS OPERATION

Details of Assets Used in Business Operation are shown in 56-1 One Report in Attachment 4 Assets Used in Business Operations and Details of Asset Valuation.

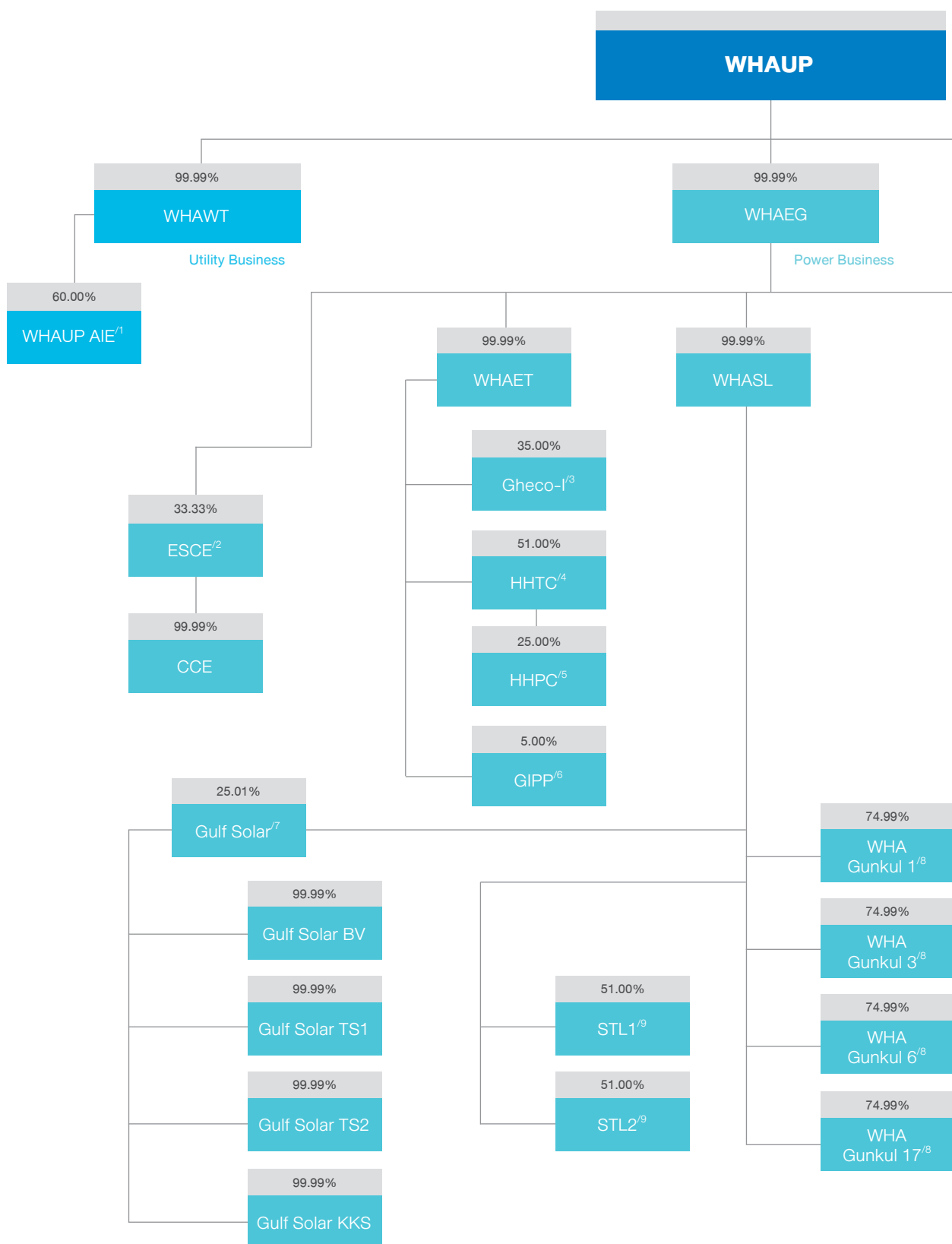
(5) UNDER-CONSTRUCTION PROJECTS

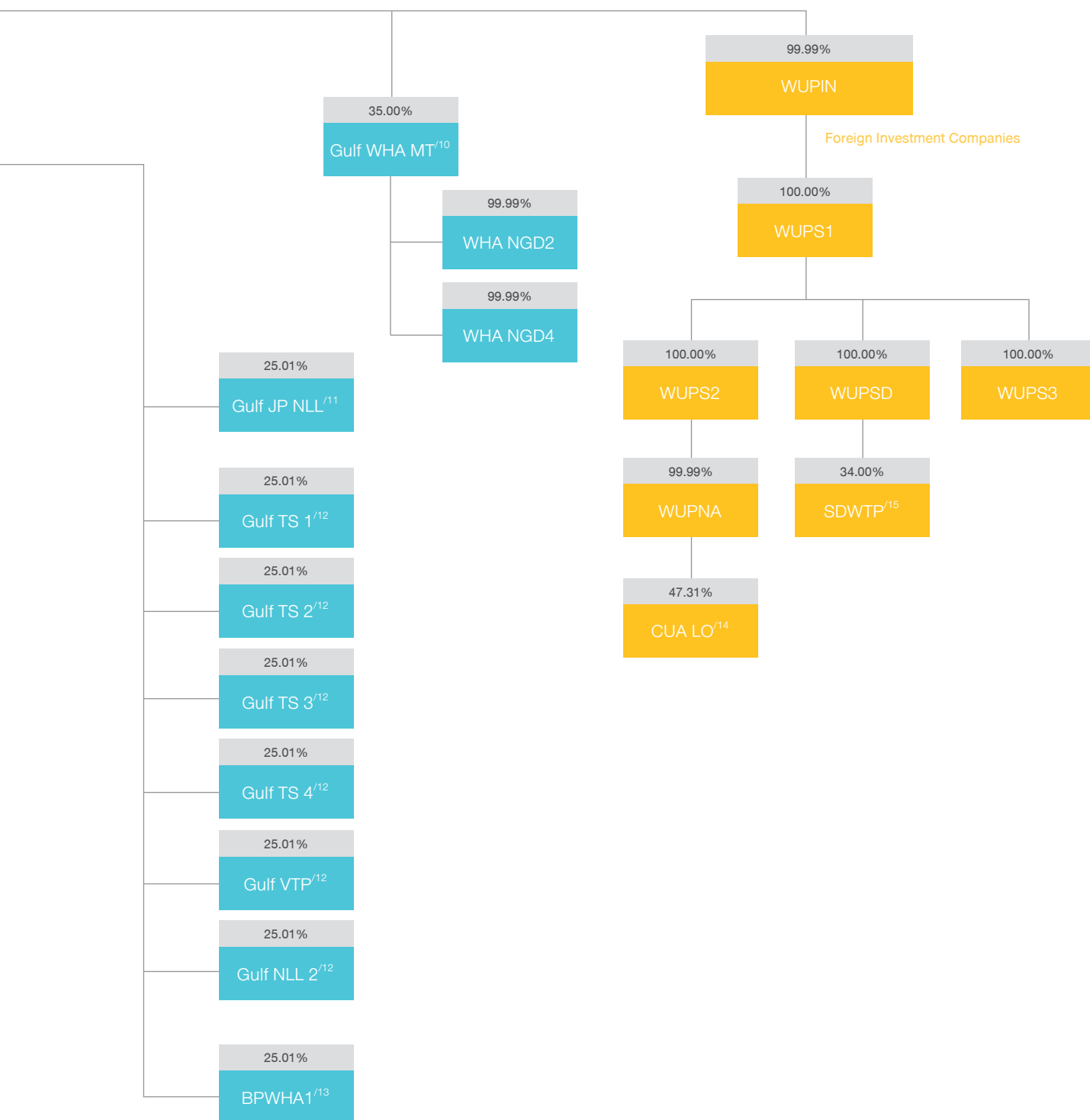
Power Plant under construction

Power plant	Location	Type of power	Category of Plant	Equity holding (percent.)	Installed power generating capacity			Capacity in proportion to equity		COD
Solar power plants	-	Solar Power	Private PPA	100%	Power	39	MW	39	MW	Quarter 1/2023 – Quarter 4/2023
					Power	39	MW	39	MW	

1.3 BUSINESS STRUCTURE OF WHAUP GROUP

1.3.1 THE COMPANY'S INVESTMENT STRUCTURE AS OF 31 DECEMBER 2022 IS SET OUT IN THE FOLLOWING DIAGRAM





Remark:

- 1/ About 45.00 percent of total issued and paid-up shares in WHAUP AIE are held by Asia Industrial Estate Company Limited.
- 2/ About 33.33 percent and 33.33 percent of total issued and paid-up shares in ESCE are held by Glow IPP3 Company Limited and Veolia Environmental Services (Thailand) Company Limited (Former name Suez Services (Thailand) Company Limited), respectively.
- 3/ About 65 percent of total issued and paid-up shares in Gheco-I are held by Glow IPP2 Holding Company Limited.
- 4/ HHTC is a holding company, in which 49.00 percent of total issued and paid-up shares are held by Glow Company Limited.
- 5/ About 55.00 percent and 20.00 percent of total issued and paid-up shares in HHPC are held by Glow Company Limited and EDL-Generation Public Company, respectively.
- 6/ About 95 percent of total issued and paid-up shares in GIPP are held by the Glow Company Limited.
- 7/ Gulf Solar is a holding company, in which 74.99 percent of total issued and paid-up shares are held by Gulf Renewable Energy Company Limited.
- 8/ About 25.01 percent of total issued and paid-up shares in each of WHA Gunkul 1, WHA Gunkul 3, WHA Gunkul 6 and WHA Gunkul 17 are held by Gunkul Engineering Public Company Limited.
- 9/ About 49.00 percent of total issued and paid-up shares in each of STL1 and STL2 are held by Athena Power Company Limited.
- 10/ Gulf WHA MT is a holding company, in which 35 percent and 30 percent of total issued and paid-up shares are held by Gulf Energy Development Company Limited Public and MITG (Thailand) Company Limited, respectively.
- 11/ About 74.99 percent of total issued and paid-up shares in Gulf JP NLL are held by Gulf JP Company Limited.
- 12/ About 74.99 percent of total issued and paid-up shares in each of Gulf TS1, Gulf TS2, Gulf TS3, Gulf TS4, Gulf VTP and Gulf NLL2 are held by Gulf MP Company Limited.
- 13/ About 74.99 percent of total issued and paid-up shares in BPWHA1 are held by B.Grimm Power Public Company Limited.
- 14/ CUA LO is a Company registration in Vietnam, in which 48.378 percent and 4.309 percent of total issued and paid-up shares are held by Mr. Nguyen Huu Luan and other Minority Shareholders, respectively.
- 15/ SDWTP is a Company registration in Vietnam, in which 51.00 percent, 10.00 percent and 5.00 percent of total issued and paid-up shares are held by Aqua One Water Corporation, Hanoi Water Limited Company and New Technology Application and Tourism One-Member Limited Liability Company, respectively.



1.3.1 GENERAL INFORMATION OF SUBSIDIARIES AND ASSOCIATE COMPANIES

No.	Company Name	Abbreviation	Nature of Business	Registered in	Shareholder	WHAUP's Shareholding (Percentage)	Registered Capital (Million)	Paid-up Capital (Million)	Par Value (Per Share)
Subsidiaries									
1.	WHA Water Company Limited 777 WHA TOWER, 22 nd Floor, Unit 2203-2205, Moo 13, Debaratna Road (Bangna-Trad) KM. 7, Bang Kaeo, Bang Phli Samut Prakarn Tel. +66-2719-9559	WHAWT	Water resources development and management	Thailand	WHAUP	99.99	300.00 THB	300.00 THB	10
2.	WHA Energy Company Limited 777 WHA TOWER, 22 nd Floor, Unit 2203-2205, Moo 13, Debaratna Road (Bangna-Trad) KM. 7, Bang Kaeo, Bang Phli Samut Prakarn Tel. +66-2719-9559	WHAEG	Holding Company	Thailand	WHAUP	99.99	9,178.00 THB	9,178.00 THB	10
3.	WHA Energy 2 Company Limited 777 WHA TOWER, 22 nd Floor, Unit 2203-2205, Moo 13, Debaratna Road (Bangna-Trad) KM. 7, Bang Kaeo, Bang Phli Samut Prakarn Tel. +66-2719-9559	WHAET	Holding Company	Thailand	WHAEG	99.99	4,250.00 THB	4,250.00 THB	10
4.	WHAUP International Company Limited 777 WHA TOWER, 22 nd Floor, Unit 2203-2205, Moo 13, Debaratna Road (Bangna-Trad) KM. 7, Bang Kaeo, Bang Phli Samut Prakarn Tel. +66-2719-9559	WUPIN	Holding Company	Thailand	WHAUP	99.99	45.00 THB	45.00 THB	45.00
5.	WHA Solar Company Limited 777 WHA TOWER, 22 nd Floor, Unit 2203-2205, Moo 13, Debaratna Road (Bangna-Trad) KM. 7, Bang Kaeo, Bang Phli Samut Prakarn Tel. +66-2719-9559	WHASL	Investment and development of renewable energy business	Thailand	WHAEG	99.99	750.00 THB	750.00 THB	10

No.	Company Name	Abbreviation	Nature of Business	Registered in	Shareholder	WHAUP's Shareholding (Percentage)	Registered Capital (Million)	Paid-up Capital (Million)	Par Value (Per Share)
Subsidiaries									
6.	WHAUP (SG) 1 PTE. Limited 30 Cecil Street, #19-08 Prudential Tower, Singapore Tel. +65-6812-1611	WUPS1	Holding Company	Singapore	WUPIN	100	1.34 USD	1.34 USD	1
7.	WHAUP (SG) 2 PTE. Limited 30 Cecil Street, #19-08 Prudential Tower, Singapore Tel. +65-6812-1611	WUPS2	Holding Company	Singapore	WUPS1	100	1.33 USD	1.33 USD	1
8.	WHAUP (SG) 2DR PTE. Limited 30 Cecil Street, #19-08 Prudential Tower, Singapore Tel. +65-6812-1611	WUPSD	Holding Company	Singapore	WUPS1	100	0.10 USD	0.10 USD	1
9.	WHAUP (SG) 3 PTE. Limited 30 Cecil Street, #19-08 Prudential Tower, Singapore Tel. +65-6812-1611	WUPS3	Holding Company	Singapore	WUPS1	100	0.10 USD	0.10 USD	1
10.	WHAUP Nghe An Joint Stock Company Lot AC1-1, WHA Industrial Zone 1 - Nghe An, Nghi Long Commune, Nghi Loc District, Nghe An Province, Vietnam Tel. +84-238-222-9999	WUPNA	Production of industrial water and wastewater treatment services	Vietnam	WUPS2	99.99	38,264.40 VND	38,264.40 VND	10,000.00
11.	WHAUP Asia Reclamation Water Company Limited 777 WHA TOWER, 22 nd Floor, Unit 2203-2205, Moo 13, Debaratna Road (Bangna-Trad) KM.7, Bang Kaeo, Bang Phli Samut Prakarn Tel. +66-2719-9559	WHAUP AIE	Production and distribution of RO Water or demineralized water to industrial users	Thailand	WHAWT	60.00	45.00 THB	31.51 THB	10
12.	WHA Gunkul Green Solar Roof 1 Company Limited 777 WHA TOWER, 22 nd Floor, Unit 2203-2205, Moo 13, Debaratna Road (Bangna-Trad) KM.7, Bang Kaeo, Bang Phli Samut Prakarn Tel. +66-2719-9559	WHA Gunkul 1	Production and distribution of electricity by solar photovoltaic rooftop	Thailand	WHASL	74.99	11.50 THB	11.50 THB	10

No.	Company Name	Abbreviation	Nature of Business	Registered in	Shareholder	WHAUP's Shareholding (Percentage)	Registered Capital (Million)	Paid-up Capital (Million)	Par Value (Per Share)
13.	WHA Gunkul Green Solar Roof 3 Company Limited 777 WHA TOWER, 22 nd Floor, Unit 2203-2205, Moo 13, Debaratna Road (Bangna-Trad) KM.7, Bang Kaeo, Bang Phli Samut Prakarn Tel. +66-2719-9559	WHA Gunkul 3	Production and distribution of electricity by solar photovoltaic rooftop	Thailand	WHASL	74.99	14.50 THB	14.50 THB	10
14.	WHA Gunkul Green Solar Roof 6 Company Limited 777 WHA TOWER, 22 nd Floor, Unit 2203-2205, Moo 13, Debaratna Road (Bangna-Trad) KM.7, Bang Kaeo, Bang Phli Samut Prakarn Tel. +66-2719-9559	WHA Gunkul 6	Production and distribution of electricity by solar photovoltaic rooftop	Thailand	WHASL	74.99	14.50 THB	14.50 THB	10
15.	WHA Gunkul Green Solar Roof 17 Company Limited 777 WHA TOWER, 22 nd Floor, Unit 2203-2205, Moo 13, Debaratna Road (Bangna-Trad) KM.7, Bang Kaeo, Bang Phli Samut Prakarn Tel. +66-2719-9559	WHA Gunkul 17	Production and distribution of electricity by solar photovoltaic rooftop	Thailand	WHASL	74.99	16.00 THB	16.00 THB	10
16.	Stella Power 1 Company Limited 725 S-Metro Building, 19 th Floor., Unit 20, Sukhumvit Road, Klongton Nua, Wattana, Bangkok Tel. +66-2153-3586	STL1	Development of solar power projects	Thailand	WHASL	51.00	439.92 THB	109.98 THB	100
17.	Stella Power 2 Company Limited 725 S-Metro Building, 19 th Floor., Unit 20, Sukhumvit Road, Klongton Nua, Wattana, Bangkok Tel. +66-2153-3586	STL2	Development of solar power projects	Thailand	WHASL	51.00	384.96 THB	96.24 THB	100

No.	Company Name	Abbreviation	Nature of Business	Registered in	Shareholder	WHAUP's Shareholding (Percentage)	Registered Capital (Million)	Paid-up Capital (Million)	Par Value (Per Share)
Associated companies									
1.	Eastern Seaboard Clean Energy Company Limited 1 Empire Tower, 38 th Floor-Park Wing, South Sathorn Road., Yannawa, Sathorn, Bangkok Tel. +66-2670-1500-33	ESCE	Electricity and Power Generation	Thailand	WHAEG	33.33	1,039.00 THB	1,017.81 THB	10

No.	Company Name	Abbreviation	Nature of Business	Registered in	Shareholder	WHAUP's Shareholding (Percentage)	Registered Capital (Million)	Paid-up Capital (Million)	Par Value (Per Share)
2.	Chonburi Clean Energy Company Limited 1 Empire Tower, 38 th Floor-Park Wing, South Sathorn Road., Yannawa, Sathorn, Bangkok Tel. +66-2670-1500-33	CCE	Electricity and Power Generation	Thailand	ESCE	99.99	989.00 THB	989.00 THB	10
3.	Gheco-One Company Limited 11, I-5 Rd., Map Ta Phut Industrial Estate, Map Ta Phut, Muang District, Rayong Tel. +66-3869-8400-10	Gheco-I	Electricity and Power Generation	Thailand	WHAET	35.00	11,624.00 THB	11,624.00 THB	10
4.	Houay Ho Thai Company Limited 1 Empire Tower, 38 th Floor-Park Wing, South Sathorn Road., Yannawa, Sathorn, Bangkok Tel. +66-2670-1500-33	HHTC	Electricity and Power Generation	Thailand	WHAET	51.00	422.15 THB	422.15 THB	8
5.	Houay Ho Power Company Limited ¹ Vieng Vang Tower, (Unit 15), 5 th Floor, No. 502A, Boulchan Road, Dongpala Thong Village, Sittasarak District, Vientiane Capital, Lao PDR Tel. +856-36-211720-1	HHPC	Electricity and Power Generation	Laos	HHTC	25.00	40.00 USD	40.00 USD	80
6.	Glow IPP Company Limited 1 Empire Tower, 38 th Floor-Park Wing, South Sathorn Road., Yannawa, Sathorn, Bangkok Tel. +66-2670-1500-33	GIPP	Electricity and Power Generation	Thailand	WHAET	5.00	2,850.00 THB	2,850.00 THB	10
7.	B.Grimm Power (WHA) 1 Limited 5 Grungthepgreetha Road, Hua Mhark, Bang Kapi, Bangkok Tel. +66-2710-3400	BPWHA1	Electricity and Power Generation	Thailand	WHAEG	25.01	1,533.56 THB	1,533.56 THB	100
8.	Gulf WHA MT Natural Gas Distribution Company Limited 87 M Thai Tower 11 th floor All Seasons Place, Wireless Road, Lumpini, Pathumwan Bangkok Tel. +66-2080-4499	Gulf WHA MT	Holding Company	Thailand	WHAUP	35.00	454.00 THB	454.00 THB	10
9.	WHA Eastern Seaboard NGD 2 Company Limited 87 M Thai Tower 11 th floor All Seasons Place, Wireless Road, Lumpini, Pathumwan Bangkok Tel. +66-2080-4499	WHA NGD2	Transport, distribution of natural gas fuels through pipelines	Thailand	Gulf WHA MT	99.99	216.00 THB	216.00 THB	10

No.	Company Name	Abbreviation	Nature of Business	Registered in	Shareholder	WHAUP's Shareholding (Percentage)	Registered Capital (Million)	Paid-up Capital (Million)	Par Value (Per Share)
10.	WHA Eastern Seaboard NGD 4 Company Limited 87 M Thai Tower 11 th floor All Seasons Place, Wireless Road, Lumpini, Pathumwan Bangkok Tel. +66-2080-4499	WHA NGD4	Transport, distribution of natural gas fuels through pipelines	Thailand	Gulf WHA MT	99.99	234.00 THB	234.00 THB	10
11.	Gulf JP NLL Company Limited 87 M Thai Tower 8 th floor All Seasons Place, Wireless Road, Lumpini, Pathumwan Bangkok Tel. +66-2080-4499	Gulf JP NLL	Electricity and Power Generation	Thailand	WHAEG	25.01	1,384.00 THB	1,384.00 THB	10
12.	Gulf TS1 Company Limited 87 M Thai Tower 11 th floor All Seasons Place, Wireless Road, Lumpini, Pathumwan Bangkok Tel. +66-2080-4499	Gulf TS1	Electricity and Power Generation	Thailand	WHAEG	25.01	1,685.00 THB	1,685.00 THB	10
13.	Gulf TS2 Company Limited 87 M Thai Tower 11 th floor All Seasons Place, Wireless Road, Lumpini, Pathumwan Bangkok Tel. +66-2080-4499	Gulf TS2	Electricity and Power Generation	Thailand	WHAEG	25.01	1,690.00 THB	1,690.00 THB	10
14.	Gulf TS3 Company Limited 87 M Thai Tower 11 th floor All Seasons Place, Wireless Road, Lumpini, Pathumwan Bangkok Tel. +66-2080-4499	Gulf TS3	Electricity and Power Generation	Thailand	WHAEG	25.01	1,520.00 THB	1,520.00 THB	10
15.	Gulf TS4 Company Limited 87 M Thai Tower 11 th floor All Seasons Place, Wireless Road, Lumpini, Pathumwan Bangkok Tel. +66-2080-4499	Gulf TS4	Electricity and Power Generation	Thailand	WHAEG	25.01	1,470.00 THB	1,470.00 THB	10
16.	Gulf VTP Company Limited 87 M Thai Tower 11 th floor All Seasons Place, Wireless Road, Lumpini, Pathumwan Bangkok Tel. +66-2080-4499	Gulf VTP	Electricity and Power Generation	Thailand	WHAEG	25.01	1,610.00 THB	1,610.00 THB	10
17.	Gulf NLL2 Company Limited 87 M Thai Tower 11 th floor All Seasons Place, Wireless Road, Lumpini, Pathumwan Bangkok Tel. +66-2080-4499	Gulf NLL2	Electricity and Power Generation	Thailand	WHAEG	25.01	1,440.00 THB	1,440.00 THB	10

No.	Company Name	Abbreviation	Nature of Business	Registered in	Shareholder	WHAUP's Shareholding (Percentage)	Registered Capital (Million)	Paid-up Capital (Million)	Par Value (Per Share)
18.	Gulf Solar Company Limited 87 M Thai Tower 11 th floor All Seasons Place, Wireless Road, Lumpini, Pathumwan Bangkok Tel. +66-2080-4499	Gulf Solar	Production and distribution of electricity by solar photovoltaic rooftop	Thailand	WHASL	25.01	50.44 THB	50.44 THB	10
19.	Gulf Solar TS1 Company Limited 87 M Thai Tower 11 th floor All Seasons Place, Wireless Road, Lumpini, Pathumwan Bangkok Tel. +66-2080-4499	Gulf Solar TS 1	Production and distribution of electricity by solar photovoltaic rooftop	Thailand	Gulf Solar	99.99	7.38 THB	7.38 THB	10
20.	Gulf Solar TS2 Company Limited 87 M Thai Tower 11 th floor All Seasons Place, Wireless Road, Lumpini, Pathumwan Bangkok Tel. +66-2080-4499	Gulf Solar TS 2	Production and distribution of electricity by solar photovoltaic rooftop	Thailand	Gulf Solar	99.99	5.55 THB	5.55 THB	10
21.	Gulf Solar BV Company Limited 87 M Thai Tower 11 th floor All Seasons Place, Wireless Road, Lumpini, Pathumwan Bangkok Tel. +66-2080-4499	Gulf Solar BV	Production and distribution of electricity by solar photovoltaic rooftop	Thailand	Gulf Solar	99.99	7.66 THB	7.66 THB	10
22.	Gulf Solar KKS Company Limited 87 M Thai Tower 11 th floor All Seasons Place, Wireless Road, Lumpini, Pathumwan Bangkok Tel. +66-2080-4499	Gulf Solar KKS	Production and distribution of electricity by solar photovoltaic rooftop	Thailand	Gulf Solar	99.99	29.67 THB	29.67 THB	10
23.	Cua Lo Water Supply Joint Stock Company Tran Phu Block, Nghi Huong Ward, Cua Lo Town, Nghe An Province, Vietnam Tel. +84-383-943-177	CUA LO	Production and distribution of tap water	Vietnam	WUPNA	47.31	48,269.59 VND	48,269.59 VND	10,000
24.	Duong River Surface Water Plant Joint Stock Company No. 452, Lac Long Quan Street, Nhat Tan Ward, Tay Ho District, Hanoi City, Vietnam Tel. +84-383-943-177	SDWTP	Production and distribution of tap water	Vietnam	WUPSD	34.00	999,611.00 VND	999,611.00 VND	10,000

Remark :

^{1/} Houay Ho Thai Company Limited held 25% in Houay Ho Power Company Limited which registered in Lao People's Democratic Republic. USD Currency is the main currency used for business operation. Also, the Company did not include the financial information of Houay Ho Thai Company Limited in the consolidated financial statement because the Company is the strategic partner. Moreover, the other investors are proficient in the operation of all power plants.

1.3.2 RELATIONSHIP WITH MAJOR SHAREHOLDERS' BUSINESS GROUP

As of 31 December 2022, the Company's major shareholders are WHA Industrial Development Public Company Limited ("WHAID") and a subsidiary of WHAID, which collectively hold 2,738,352,580 shares or 71.59% of the Company's paid-up capital, with WHAID being a subsidiary of WHA Corporation Public Company Limited ("WHA").

The 3 main groups are 1) the Company and its subsidiaries 2) WHAID and 3) WHA. Each group has clearly separated scope of business as follows :

- 1) The Company and its subsidiaries operate the main business as follows :
 - 1.1 Utilities business including raw water distribution, industrial water production and distribution, and wastewater management for industrial operators in industrial estates and industrial lands, as well as utility consumers outside industrial estates and;
 - 1.2 Power business through domestic and international investment in power plant projects

- 2) WHAID's main business is the development and management of industrial estates and industrial lands
- 3) WHA's main business is the development of warehouses, distribution centers for rent, and providing digital database services

To avoid conflicts of interest arising from the business competition and to protect the rights of the 3 main shareholder groups, the Company entered into various contracts with the WHAID Group and the WHA Group, including business partner contracts to support the business and create new business opportunities for the Company, a non-competitive agreement with the WHAID group, and a scope of business contract with the WHA Group to define the scope of operations. This is to prevent conflicts of interest arising between the 3 main groups.

1.3.3 THE PERSON WITH A POTENTIAL CONFLICT OF INTEREST HOLDS SHARES OF A SUBSIDIARY OR ASSOCIATE COMPANY AT AN AMOUNT EXCEEDING 10 PERCENT OF THE VOTING SHARES OF COMPANY

- None -

1.3.4 SHAREHOLDERS

As 31 December 2022, the Major shareholders are as follows :

No.	Shareholders	Number of shares	Percent
1.	WHA Group		
	WHA Industrial Development Public Company Limited ^{1/}	2,694,852,570	70.45
	WHA Industrial Development International (SG) PTE. LTD. ^{2/}	43,500,010	1.14
	Total	2,738,352,580	71.59
2.	Bangkok Life Assurance Public Company Limited	97,830,300	2.56
3.	Ms. Jareeporn Jarukornsakul	73,836,600	1.93
4.	Ms. Chatchamol Anantaprayoon	33,363,478	0.87
5.	Thai NVDR Company Limited	27,099,609	0.71
6.	Mr. Chaiwat Phupisut	26,684,956	0.70
7.	Ms. Supitchaya Phupisut	26,536,506	0.69
8.	South East Life Insurance Public Company Limited	23,685,800	0.62

No.	Shareholders	Number of shares	Percent
9.	KKP Equity Retirement Mutual Fund	20,341,300	0.53
10.	Mr. Worawut Archchanaroj	12,270,000	0.32
Total top 10 major shareholders		3,080,001,129	80.52
Other shareholders		744,998,871	19.48
Total		3,825,000,000	100.00

Remark :

^{1/} WHA Industrial Development Public Company Limited engages in industrial estates development in which its securities were delisted from the Stock Exchange of Thailand (the SET) since 2 March 2016. Currently, WHA Venture Holding Company Limited hold shares 98.54 percent.

WHA Venture Holding Company Limited is a holding company with 99.99 percent of its shares currently held by WHA Corporation Public Company Limited.

^{2/} WHA Industrial Development International (SG) PTE. LTD. is an investment company incorporated under the law of Singapore. 100 percent of its shares held by subsidiary of WHA Industrial Development Public Company Limited.



1.4 REGISTERED CAPITAL AND PAID-UP CAPITAL

1.4.1 ORDINARY SHARES

As of 31 December 2022, the Company's registered capital was THB 3,825,000,000 and its paid-up capital was THB 3,825,000,000, divided into 3,825,000,000 ordinary shares with a par value of THB 1 per share.

1.4.2 OTHER SHARES WITH DIFFERENT TERMS OR RIGHTS FROM ORDINARY SHARES

- None -

1.4.3 THE COMPANY'S SHARES OR CONVERTIBLE SECURITIES AS AN UNDERLYING SECURITIES FOR ISSUANCE OF INVESTMENT UNITS OF MUTUAL FUNDS FOR FOREIGN INVESTORS (THAI TRUST FUND) AND THE NON-VOTING DEPOSITORY RECEIPTS (NVDR)

- None -

1.5 ISSUANCE OF OTHER SECURITIES

1.5.1 CONVERTIBLE SECURITIES

- None -

1.5.2 DEBT SECURITIES

As of 31 December 2022, the Company has the debentures. The details are as follows :

Debenture	Amount (Million Baht)	Coupon (Percent)	Tenor (Years)/Maturity Date	Issue Rating by TRIS
WHAUP236A	1,290	3.17 % Semi-annually payment	5 Years Maturity date : 26 June 2021	A-
WHAUP256A	1,320	3.66 % Semi-annually payment	7 Years Maturity date : 26 June 2021	A-
WHAUP302A	1,500	3.25 % Semi-annually payment	10 Years Maturity date : 21 February 2030	A-
WHAUP237A	1,500	1.91 % Semi-annually payment	2 Years Maturity date : 20 July 2023	A-
WHAUP247A	1,300	2.09 % Semi-annually payment	3 Years Maturity date : 20 July 2024	A-
WHAUP267A	700	2.75 % Semi-annually payment	5 Years Maturity date : 20 July 2026	A-
WHAUP231A	1,000	1.48 % Semi-annually payment	1 Year Maturity date : 27 January 2023	A-
WHAUP256B	1,800	3.06 % Semi-annually payment	3 Years Maturity date : 1 June 2025	A-
WHAUP276A	1,000	3.71 % Semi-annually payment	5 Years Maturity date : 1 June 2027	A-
WHAUP24DA	750	2.75 % Semi-annually payment	2 Years Maturity date : 9 December 2024	A-
WHAUP27DA	750	3.50 % Semi-annually payment	5 Years Maturity date : 9 December 2027	A-

1.6 DIVIDEND POLICY

1.6.1 DIVIDEND POLICY OF THE COMPANY

The Company will consider paying dividend according to provision of law, including the Public Limited Company Act, B.E. 2535, which requires a public limited company to pay dividend only from the net profit derived from standalone financial statement with no accumulated deficit.

The Company's dividend payment policy is to pay dividends in the amount of not less than 40 per cent of the Company's consolidated net profit after deducting corporate income tax and other reserve funds as required by law in each year. However, the dividend payment of the Company may take into account the Company's financial position, cash flow, liquidity, investment plan and other factors, as

the Board of Directors deems appropriate. The dividend payment shall not materially affect the Company's normal business operations and comply with law, regulation or relevant ruling. The Board of Directors shall propose to the shareholders' meeting approval of dividend payments, except the payment of interim dividends. The Board of Directors may declare interim dividends and report to the shareholders at the next shareholders' meeting.

The payment of dividend shall not exceed retained earnings of the Company in the separate financial statements of the Company and shall be in accordance with applicable laws.

Dividend Payment History

Year	2020	2021	2022*
Earnings per share (THB/share)	0.21	0.19	0.12
Dividend per share (THB/share)	0.2525	0.2525	0.1600
Dividend payout ratio (%)	132	144	144

Remark

* Annual dividend payment for the 2022's operating performance period included an interim dividend of 0.0600 baht per share for the nine-month period ended September 2022 results, which was paid previously and an additional dividend at 0.1000 baht per share for the last quarter of 2022 results. However, the right to receive a dividend payment is subject to the approval of the 2023 Annual General Meeting of Shareholders.

1.6.2 DIVIDEND POLICY OF THE SUBSIDIARIES

Each Subsidiary's dividend payment policy is to pay dividends in the amount of not less than 50 per cent of the net profit after deducting corporate income tax and other reserve funds as required by law in each year. However, the dividend payment of each Subsidiary may take into account the financial position, cash flows, liquidity, investment plan and other factors, as the board of directors deems appropriate, and for the best interest of shareholders. The dividend payment shall not materially affect each Subsidiary's normal business operations. The board of directors of each Subsidiary shall propose to the shareholders' meeting approval of dividend payments,

except the payment of interim dividends. The board of directors of each Subsidiary may declare interim dividends and report to the shareholders at the next shareholders' meeting.

1.6.3 DIVIDEND POLICY OF ASSOCIATES AND JOINT VENTURES

Each associate and joint venture is to pay dividends in proportion to a shareholding according to conditions set out in related shareholders agreement.



RISK MANAGEMENT

2.1 RISK MANAGEMENT POLICY AND PLAN

The WHA Utilities and Power Public Company Limited and its group companies (the “Company”) are committed to managing risks along with business operations and creating sustainable corporate values in order to operate in accordance with the strategy and the main goals of the organization under acceptable risk which covers Environmental, Social and Governance Risk Management, compliance with laws and regulations, anti-corruption, fair and equal treatment to stakeholders in line with good corporate governance, management of risks regarding information technology, innovation, including emerging risks in the future that may affect business operations both in the short and long term as well as having continuous risk management as part of an organizational culture. The company has implemented risk management process in accordance with the guidelines set forth by The Committee of Sponsoring Organizations of the Treadway Commission (“COSO”) throughout the company at the organization level, business unit level and operational level. The risk management process also includes communication and training provided for the Board of Directors, the management team and all employees across the company so as to strengthen awareness regarding the responsibility and accountability for the risk management policy.

For the clarity purpose of Company’s risk management, the following guidelines have been established :

1. Risk Management Committee is responsible for formulating policies, guidelines, risk management frameworks and annual risk management plans including business continuity management and oversee the Company’s risk management and companies in the group or other businesses in which the Company invest significantly to comply with the policy. This also includes giving consideration, giving comments and advice and following up to ensure effective and efficient risk management as stated in the charter.
2. Risk Management Committee formulates enterprise risk management throughout the organization according to the international standards as well as define acceptable risk level (Risk Appetite). The “Enterprise Risk Management Manual” is created as a guideline for risk management practices for all employees across the organization so that the practice is to be in line with the same direction.



3. Risk Management Working Group formulates risk assessment which considers both external and internal risk factors that potentially cause the Company to not achieving the intended objectives. Risk assessment covers all aspects of risks including the following :
 - 1) Strategic Risk
 - 2) Operational risk
 - 3) Financial Risk
 - 4) Compliance risk with laws, rules, and regulations
4. Risk Management Working Group and all company employees are responsible for assessing the likelihood and impact of identified risks by means of assessing risks for both quantitative and qualitative measures such as reputation and image of the company. The responsibility also includes having appropriate risk management put in place as to manage risks at an acceptable level; setting up appropriate risk response; monitoring results; reviewing coverage and the effectiveness of risk response measures to be up-to-date; and setting key risk indicators to anticipate risk events and to control risk mitigation activities to meet targets as intended.
5. Risk Management Working Group is to ensure effective risk management by analyzing and integrating the linkage of risk factors including risk assessment, risk monitoring and risk reporting to ensure that organization goals will be achieved as intended.

2.2 RISK FACTORS IN THE COMPANY'S BUSINESS OPERATIONS

2.2.1 RISKS TO THE COMPANY'S OR GROUP'S BUSINESS

1. STRATEGIC RISK UTILITIES BUSINESS

(1) REVENUE OF THE UTILITIES BUSINESS MAINLY DERIVES FROM CUSTOMERS IN INDUSTRIAL ESTATES AND INDUSTRIAL LANDS OF WHA INDUSTRIAL DEVELOPMENT PUBLIC COMPANY LIMITED

Currently, the Company's revenue is derived from its utilities business in industrial estates and industrial lands developed and managed by WHA Industrial Development Public Company Limited and its subsidiaries (collectively called the WHAID Group) which is the Company's major shareholder. This source of revenue accounts for 63.8 percent and 75.7 percent of the Company's total revenue and normalized share of profit and dividend income from investments for 2021 and 2022, respectively.

The Company and the WHAID Group have entered into a Strategic Partnership Agreement and Right Lease Agreement, which entitles the Company to operate its utilities business in the WHAID Group's industrial estates and industrial lands for the current and future projects for a period of 50 years beginning on 30 March 2016. However, if the WHAID Group decides to suspend expansion of its industrial estates and industrial lands development business in the future for any reason, and the Company has no other customers outside the WHAID Group's industrial estates and industrial lands, the Company's revenue may not significantly growth. On the other hand, if the right lease agreement expires without renewal and the Company lacks customers other than those located in the WHAID Group's industrial estates and industrial lands to replace this revenue, the Company's operating results and financial position may be materially impacted. To mitigate such risks, besides the fact that the Company actively explore and selects projects (both inside and outside IE) with an appropriate equity internal rate of return and conducts a feasibility study and a sensitivity analysis, the Company also keep close monitoring and management to ensure that the contract between i) WHA Industrial Development and ii) utilities customer will not be impacted from any external factor as mentioned from the fact that even there is any disturb from external factors, the Company still has the right to operate in the utilities and has quite a good buffer from various customers from central utilities scale.

The Company has aggressively expanded its utilities business outside the WHAID group's industrial estates and industrial lands since 2020. In 2021, the Company partnered with Asia Industrial Estate Company Limited to establish a new joint venture company to operate utilities business in Asia Industrial Estate (Map Ta Phut), to continue its growth in other area outside WHAID group's industrial estates and industrial lands which has already



recognized the revenue in October 2022 from the first customer and will continue to expand the customer base in such industrial estate in 2023. For other project such as EECi wastewater treatment, the customers continue to start operation and the revenue growth accordingly. On the other segment like the municipality, company has aggressively started the project exploration in order to secure water purchase agreement with both municipalities and Provincial Water Authority. For Vietnam market, the operational performance in term of volume of water sold of the projects that company invested also shown better continuously with the newly investment opportunity in new WHA IZ in Nghe An and Thanh Hoa province. If the Company enters into a joint venture, it carefully selects an investor based on their knowledge, ability, experience, expertise, financial position, and their past performance.

In term of the long term strategic direction, The Company is exploring the opportunity to provide more varieties of products and solutions, the products shall cover demands of investors both in WHA Industrial Estates' customer and outside so the growth can be diversified and minimize the risk too.

(2) RISK FROM CUSTOMERS CONCENTRATION

The Company's core customers in the utilities business are primarily operators in the petrochemical, power generation, and automobile industries located in industrial estates and industrial lands, which account for 41.0%, 22.8% and 12.9%, respectively, of the Company's total utilities business revenue in 2022. Additionally, the Company's 10 major customers are mostly operators in the petrochemical and power generation industries, accounting for 43.5% and 45.8% of total revenue in 2021 and 2022, respectively. A reduction or slowdown in these industrial sectors' or major clients' business expansion or investment conditions may result in decreased demand for utilities services and other utilities, which might materially affect the Company's operating results.

The Company realizes the risk and potential consequences associated with that factor. To mitigate risk, 1) the Company closely monitors its customers' water usage, 2) to consistently inquire about and revise water usage plans for those customers, and 3) to mitigate potential consequences sustainably, the Company established policies and operating plans to offer a broader range of products to better meet customer demand, such as specific industrial water or reverse osmosis (RO), to focus on a broader range of customer groups, as well as marketing plan to penetrate customer outside industrial estates and industrial land in strategic locations.

In 2021 - 2023, the Company has commenced construction of an expansion of the utility system in the new WHAID industrial estate, WHA RY36 and WHA IER (start construction in 2023), to diversify its customers across multiple industries. Additionally, the Company's strategy to expand the utilities business outside of the WHAID group's industrial estates, as discussed in the risk mitigation measure in item 1 above, will diversify the Company's business.

(3) RISK FROM RELIANCE ON MAJOR RAW WATER DISTRIBUTORS

The Company operates its utility business by producing and distributing industrial water to operators in industrial estates and industrial lands where raw water is a key raw material. The cost of raw water accounted for approximately 61.8% of the Company's total cost. Currently, the Company supplies raw water primarily from 3 major suppliers, namely (1) Eastern Water Resources Development and Management Public Company Limited (East Water), a large concessionaire granted by the Royal Irrigation Department (RID) with service areas in Chonburi, Rayong, and Chachoengsao provinces, (2) RID, and (3) the WHAID Group (from the WHAID Group's internal reservoir of natural water), with their supply volumes accounting for 80.7%, 6.9% and 12.4%, respectively.

If East Water, RID, or the WHAID Group are unable to supply raw water to the Company in the quantity required and at the agreed time due to a shortage of raw water or a significant increase in the selling price of raw water, this could have a material adverse effect on the Company's financial position, operating results, and opportunities.

The Company has planned to mitigate the risks associated with having a few main raw water suppliers and/or distributors by 1) monitoring natural raw water resources and planning to build water reservoirs in some appropriate industrial estates. In 2021, the Company has commenced construction of reservoir in Rayong province which has a capacity of 6 million cubic meters per year and will be used for the company's operation. The reservoir is in operation in July 2022 which can increase the reliability of water resource of the group. 2) planning to explore more natural raw water resources in addition to those currently utilized

3) developing of wastewater reclamation technology. In 2021, the Company has expanded capacity of wastewater reclamation projects to around 30,200 cubic meters per day and increase to be 34,000 cubic meters per day in 2022 in WHAID's industrial estates, and 2,500 cubic meters per day in ASIA's industrial estates the Company continuously follows up and collaborates with customers to ensure adequate water usage and distribution, as well as with raw water distributors to discover protection and solutions. With the mentioned preventive measures in place, the Company is confident in the availability of sufficient and high-quality raw water resources for its utilities business.

UTILITIES AND POWER BUSINESS

(1) RISK FROM THE COMPANY'S INVESTMENT IN BUSINESSES OVER WHICH THE COMPANY HAS NO CONTROL

Currently, the Company invests in the utilities and power business through acquisition of shares. Revenues from the Company's local and/or international utilities business and energy business including water treatment plant, large power plants (IPP), small power plants (SPP), and very small power plants (VSPP) are derived through investments in companies engaged in the utilities and power business. These companies are considered associates of the Company, and as such, the Company has the authority to control those entities and their management through Boards of Directors. Additionally, while the major shareholders of these companies have competence in such areas, the Company is exposed to the risk associated with such investments. The Company earned revenue from its investments in such utilities or power businesses in the form of shared of profits from associates and joint ventures, as well as dividends. The Company mitigates this risk by investing in associated companies with joint venture partners who possess great expertise and experience. Additionally, the Company has arranged a meeting with joint venture partners to monitor performance, disclose any concerns or impediments that arise, and work together to resolve them successfully. The Board of Directors meeting was held to approve investment plans, business plans, and expansion plans, as well as to recruit personnel to monitor and examine operations for compliance with applicable laws, and contractual regulations.

(2) RISK FROM INVESTMENT IN FOREIGN COUNTRIES

Due to the Company's investment in utilities and power projects in foreign countries, we are exposed to many uncontrollable factors such as the changes in the economic, political, social, legal, regulation, investment policy, and exchange rate fluctuations of the countries in which the investment was made. Additionally, human resource is one of the risks that might have a detrimental impact on a Company's revenue.

To mitigate the mentioned risks, the Company has considered and examined the credibility of joint venture partners, including the countries in which it intends to invest, as well as thoroughly reviewed the risk factors of foreign investment projects on a regular basis. Moreover, we are continuously monitored to minimize potential risks. In terms of human resources, the Company is preparing its personnel for foreign business developments and is actively recruiting additional personnel to oversee the operations of invested companies over which the Company does not have direct oversight to reduce potential risks.

2. OPERATIONAL RISK UTILITIES BUSINESS

(1) RISK FROM THE ABILITY TO INCREASE UTILITY RATES IN INDUSTRIAL ESTATES

Section 14 of the Industrial Estate Authority of Thailand Act B.E. 2522 (as amended) stipulates that "The Industrial Estate Authority of Thailand ("IEAT") shall have the authority to fix the selling price, rentals, and hire-purchase prices of immovable or movable properties, and maintenance charges of facilities, as well as service charges in such industrial estate as is suitable for the business". Consequently, the IEAT retains sole authority to announce and increase the prices of public utilities, such as industrial water and management service for central wastewater treatment ponds in industrial estates. The Company is not entitled to charge more than the IEAT-specified rates for public utilities. Therefore, the Company is at risk if the IEAT denies its request to adjust the utility rates to reflect the changing costs and market conditions. However, no requirement exists for the Company to obtain approval for the utility rates charged in the industrial land.

(2) RISK FROM DETERIORATION AND DAMAGE OF INDUSTRIAL WATER PRODUCTION AND DISTRIBUTION SYSTEM AND WASTEWATER TREATMENT SYSTEM

The Company's industrial water production and distribution system and wastewater treatment system may deteriorate over time or be damaged during operation. This may have a direct impact on the industrial water production process and distribution, or the wastewater management system must be shut down. If the Company is unable to complete the repair within a reasonable time, in addition to affecting the Company's ability to generate income and cash flow, it may also be unable to comply with the conditions under the Right Lease Agreement made with the WHAID Group and with the Company's customers, which could have a significant impact on the Company's performance.

To mitigate such risks, the Company regularly inspects the water system on a regular basis and develops an adequate maintenance plan for the industrial water production and distribution systems. The maintenance plan focuses on fixing broken water systems and increasing the efficiency of industrial water production and distribution systems. If it is necessary to temporarily halt water production and distribution during maintenance, the Company will notify customers in the industrial estate in advance and prepare a reserve water source to temporarily replace the main water system until the main water production and distribution system has been repaired. In addition, the Company has arranged property insurance with insurance providers to cover losses caused by various incidents to all pipelines.

According to the Company's digital transformation strategy, the water production and distribution system management improvement project was initiated in 2021. This project consists of Supervisory Control and Data Acquisition, or SCADA, the integration of smart devices in the operating system, and the improvement of the operation in the important operating system from manual to digital, to provide the Company with information regarding operations, such as the condition of equipment, to reduce operational risks.

(3) RISK FROM UTILITIES RATE ADJUSTMENT POLICY IN VIETNAM

For investment in utilities business in Vietnam, if the operator wishes to adjust the water tariff at which water is sold to the government agency to reflect the value of the investment, such as construction, expansion of production capacity, or construction of pipes to expand water service areas, etc., as well as any other production costs that have changed, water tariff adjustments will be subject to consideration by the Provincial People Committee. The criteria for consideration are in accordance with the Ministry of Finance's Notification Circular No.44/2021/TT-BTC dated 5 August 2021. However, the risk persists because of the protracted approval process and changed policy, which are subject to the People Committee's consideration. To manage such risk, the Company must adhere to all applicable laws, rules, and regulations, particularly coordination, and must continuously monitor the considerations at each stage.

POWER BUSINESS

The Company invests in the power business through the acquisition of energy company stock. In 2022, the share of profit and dividends from the energy business accounted for approximately 41.8% of the Company's total normalized share of profit and dividend income for the year ended 31 December 2022 whereby the major normalized share of profit came from the SPP power plant business (the Company's associate over which the Company has no control). The Company received revenue from power business in form of share of profit from investments in its associates and joint ventures and dividend income.

Risk from investment in the power business can be summarized in brief as follows :

(1) RISK FROM FUEL SHORTAGE

Natural gas and coal are the primary operational costs of natural gas and coal-fired power plants. If there is a natural gas or coal shortage, or if a supplier is unable to supply the required quantity of natural gas or coals to the power plants of the Company's associates. As a result, a fuel shortage could have a material unfavorable effect on the Company's profit sharing, financial position, and operating results.

However, power plants will enter into a long-term natural gas purchase agreement with a supplier, namely PTT PLC., under which PTT PLC. will be required to pay compensation if it is unable to deliver natural gas in specified quantities and conditions. Thus, the impact can be mitigated to a degree. In terms of coal fuel supply, the power plants have signed medium-term coal purchase agreements with suppliers to hedge against the potential of fuel shortages.

UTILITIES AND POWER BUSINESS

(1) RISK FROM UNCERTAINTY IN ECONOMIC, POLITICAL, SOCIAL, AND LEGAL CONDITIONS THAT MAY AFFECT THE COMPANY'S BUSINESS EXPANSION PLAN AND OPERATING RESULTS

As the Company engages in the utilities and power businesses, its prospects of business expansion and operating results depend on the economic, political, social conditions, and legal framework of the country where the Company operates the business. Particularly, if there is a material adverse change in economic conditions resulting in liquidity risk, inflation, foreign exchange rate fluctuations, and credit risk which may affect the interest rate, or if there is a material change in social conditions and laws, then those changes may have adverse effects on the Company's business operations, financial position, operating results, and business expansion plan.

(2) SLOWDOWN IN THE GLOBAL ECONOMY, CHANGES IN THE GOVERNMENT POLICY AND OTHER MACROECONOMIC FACTORS

The global economic slowdown, changes in state policy, political uncertainty, and other macroeconomic factors may affect investment and expansion of production capacity of industrial operators who are the Company's customers. Political uncertainty and other macroeconomic factors in Thailand may erode investors and the private sector's confidence in Thailand investment. Some business segments may decide to relocate, expand, or establish their manufacturing bases in neighboring countries instead to reduce this risk. Private sector consumption may also be constrained by the dismal political environment and high levels of household debt. Declines in domestic consumption, production and export also curb investment activities, which may cause our clients to scale down planned expansions or halt investment choices, which might have a negative impact on the Company's business.

The risk for Power Business has been mitigated by long-term contracts with customers and take or pay contracts that reduce the risk of business fluctuations. The Company have long-term contracts with government e.g. The Electricity Generating Authority of Thailand and The Provincial Electricity Authority which has stability and high reliability.

The company focuses on the business to be the renewable energy business which is high growth and high demand business. It also answers environmental, social and management.

For utilities business, The Company's customers are classified as industrial customers that located in industrial estates and industrial land of WHAID. Thus, its customers have high creditability and variety of business sectors that can diversify the risk. Furthermore, if there is a special water purchase contract such as demineralized water, The Company mitigates that risk by take or pay contract.

Thailand remains appealing to foreign investors seeking to invest in Southeast Asia, owing to its better labor quality and competitive wage rates compared to those in European countries, the United States, and other Asian countries. Additionally, Thailand's infrastructure and public utilities are better than some competitors, and Thailand also offers an attractive investment promotion policy.

(3) RISK FROM SEVERE ACCIDENT, DROUGHT, NATURAL DISASTER, AND PANDEMIC

Natural disasters, such as droughts, floods, storms, fires, earthquakes, pandemics, and severe accidents, are uncontrollable and have the potential to impact the Company's operations and cause significant damage to its operating assets. Additionally, industrial and commercial operators in the industrial estate or industrial land where the Company operates may be impacted by such events, which will have an impact on the Company's profitability and operating results.

The Company is aware of the possibility of these risks and places great importance on selecting the location of the project, implementing an appropriate security system, and designing the road within the project to be higher than the level of the main public road in front of the project or the

highest flood level in that area over the past 30 years. In addition, all of the Company's projects are insured against damage caused by natural disasters and accidents (All Risk Insurance). The Company is confident that it has planned and implemented adequate measures to prevent flooding damage. Therefore, the likelihood of severe floods causing damage to the Company's projects more than the compensation sum is quite limited.

During seasons of drought risk, in addition to participating in the Water War Room, an entity tasked with handling water-related issues, the Company implements various internal drought response measures as follows :

1. Wastewater reclamation : Recycling of wastewater to be used as industrial water;
2. Alternative raw water resources : Considering water resources from local agencies and private sector to increase water supply for industrial customers.
3. Wastewater Reuse : Reusing treated wastewater for activities, such as plant watering, building, etc.

These measures and cooperation allow the Company to greatly reduce the drought-related risk to its customers.

Since the early outbreak of the Coronavirus (COVID-19) in China in 2020, the Company has been aware of and closely monitored the situation, including assessing various conditions that potentially impair operations. The Company has revised the Business Continuity Plan (BCP) that has been in place since 2019 to properly deal with the COVID-19 outbreak by encouraging overseas customers to communicate via telephone and online meeting. As the situation became more dangerous and Thailand reported its first case of COVID-19, the Company begun measures to reduce the risks to its employee's safety while limiting the impact on its business operations. For example, some employees are allowed to work from home to reduce workplace density. The Company provides adequate equipment and resources, such as notebook computers, and has clearly defined work from home manuals for each department so that employees can work with optimal productivity and safety. In the case of employees who must work at the office or the Company's facilities in each area, the Company sets up alternate sites in various locations. To limit the risk of infection or transmission between employees, the Group also requires that each

department's employees be separated into at least two groups to work in specific locations and that travel be kept to a minimum. In accordance with the guidelines of the World Health Organization (WHO), the Centers for Disease Control and Prevention (CDC), the Department of Disease Control of Thailand, and other organizations, the Company develops work manuals and practices to protect employees from the COVID-19, such as temperature checks of both employees and visitors, regular spraying of disinfectants in the office, etc. Moreover, the Company adopts bubble and seal measures in important or high-risk industrial estates by requiring employees to stay at the control room for 14 days each time to limit access to the control room. The Company additionally performs a financial sensitivity analysis to ensure that the potential events will not have a significant impact on its financial position or liquidity. Nevertheless, the COVID-19 situation has not had a significant impact on the Company's overall business operations in the past or the present.

(4) HUMAN RIGHTS RISK

The Company has conducted continuous human rights risk assessment at the organizational level, covering both business operations within the Group and the business value chain. In 2022, the Company prioritized the following risks : the health and safety of its employees, customers, and communities, as well as contractors and partners; and the living standards and quality of life in communities impacted by the Company's water management. The Company has assessed the risks and developed a preventative plan to address any potential issues, as well as conduct regular examinations and monitoring.

3. FINANCIAL RISK

Operating performance, financial position, economic environment in Thailand and other countries, access to financial and capital markets in Thailand and other countries, and interest rates are all risk factors for the Company's financial management. To increase operational efficiency, the Company is required to seek for a suitable and sufficient source of funding, as well as maintain the

financial cost at an appropriate level. As of 31 December 2022, the Company's debt to equity ratio was 1.19 times, while its interest-bearing debt to total equity ratio was 1.01 times. The Company has a strong financial position with a low debt level, a moderate liquidity, no foreign currency debt, and access to broader lending sources. These will provide the Company greater flexibility to expand the business while minimizing financial risks.

The power business's core revenue is derived from a share of profit from investments in associates and joint ventures. The Company's associates in the power business have sources of funding and loans in foreign currencies for the development of power plants and a portion of operating costs. Thus, currency and interest rate fluctuations may have a negative impact on the Company's share of profit from investments, financial position, and operating results.

However, these associates in power business have signed contracts to hedge foreign exchange risk (F/X Swap) and interest rate swap to mitigate such financial risk.

4. COMPLIANCE RISK

(1) RISK FROM THE USE AND INTERPRETATION OF THE LAW AND NOTIFICATIONS RELATED TO THE COMPANY'S BUSINESS

Announcement of the Revolutionary Party No. 58 stipulates that the waterworks business is a public utility business that must be licensed or granted a concession by the Minister prior to the operation. Also, the notification of the Ministry of Natural Resources and Environment Re : Criteria for Conducting Concession of the Waterworks for Safety or Well-being of People B.E. 2554 ("Ministry of Resources' Notification") issued in accordance with Announcement of the Revolutionary Party No. 58 stipulates that "the Waterworks" must be granted concession by the Minister of the Ministry of Natural Resources and Environment. The Ministry brought the matter into a discussion with the Department of Water Resources, a regulatory body according to the notification of Ministry of Resources, whether the water production and distribution business

for industries and its subsidiaries is justified to obtain a concession according to the Announcement of the Revolutionary Party No. 58 and the Ministry Notification. The conclusion is that the Company's production and distribution of industrial water is only for the benefit of the Company and its subsidiaries. Since the water is not produced or distributed to the public, it is not classified as a waterworks business. As a result, it is not subject to concession under the Announcement of the Revolutionary Party No. 58 and the Ministry of Resources' Notification.

However, if the law changes in the future or the interpretation of the Revolutionary Party's Announcement No. 58 and the Ministry Notification changes, the Company and its subsidiaries may be required to apply for a license or concession, and if the Company and its subsidiaries are not obtained a license or concession for any reason, such event could have a negative effect on the Company's business operation, revenue, financial position, performance, and business opportunities.

(2) CHANGES IN THE IEAT'S LAWS, RULES, AND REGULATIONS AND OTHER APPLICABLE LAWS RELATED TO THE COMPANY'S BUSINESS

The Company's industrial utilities business and power business are governed under the laws, rules and regulations by regulated government organization such as Ministry of Industry, Ministry of Energy, Department of Industrial Works, The Industrial Estate Authority of Thailand, Energy Regulatory Commission of Thailand and other applicable laws that may be interpreted differently in the future.

The Company's business is at risk from changing laws, including relevant regulations. In addition, the public utilities and power service policy is subject to changes based on the government's policy and administrative system. Changes to the national policy on public utilities and power, as well as the adoption of new rules and regulations, such as a policy on alternative energy, could

have a negative impact on the Company's investment and business expansion, including its operations, revenue, financial position, operating results, and business prospects.

5. EMERGING RISK

(1) RISK FROM DIGITAL DISRUPTION AND CHANGE IN BUSINESS MODELS

In today's business environment, technological advancements improve work efficiency, decision-making, and cost reduction, offer a competitive edge, and ultimately lead to increased automation. This may render the Company's business model outdated and unable to meet customer demands.

However, technological change can create new business opportunities that add value to the organization. Therefore, the Company has a digital transformation strategy and continuously assesses the risks to develop work processes and ensure that these strategies are appropriate in a rapidly changing situation in digital technology. The Company has established a risk management plan by enhancing and developing innovations in products and services offered to customers, including expanding energy innovation through Smart Energy projects, Smart Microgrid, Peer-to-Peer Energy Trading, and Energy storage, etc. Moreover, the Company has adopted technology to greatly enhance its operations. As part of the Company's digital transformation strategy, the WHAUP Smart Water Solutions project was initiated in 2021 to digitalize the administration of industrial water production and distribution systems. This project provides a database detailing the location of the water distribution pipe network to facilitate the management of the Company's assets, including future maintenance planning. There are also automatic water meter reading devices installed to relieve the workload of staff, take note of the meter, as well as use important information in planning operations to prolong the service life of the equipment in the piping system and reduce water loss etc.

(2) RISK FROM CLIMATE CHANGE

As a result of the fast-evolving global climate change situation, both acute natural disasters, such as floods, droughts, storms, and lightning, as well as long-term weather changes, are occurring more frequently and lasting longer. It also influences stricter regulation, changes in consumer behavior, advances in technology, etc.

The Enterprise Risk Management Working Group has considered climate change-related risks and opportunities. To develop strategic plans, action plans, and management measures against such changes to mitigate the impact that may affect production costs and operations, income, competitiveness, and sustainability in business operations in the future, key risks and opportunities related to climate change have been identified, including both physical risks and transition risks. The following are essential measures for risk management :

- Give priority to locating the project in locations with a low flood risk or where no retrospective flood reports exist.
- Apply for all risk insurance covering all types of damage caused by natural disasters and accidents for all projects.
- Consider alternative raw water resources to increase the amount of water available to industrial customers.
- Investment in technologies to reuse wastewater as industrial water (Wastewater Reclamation), including the use of treated wastewater in various activities (Wastewater Reuse).
- A study of innovative construction materials and equipment used in solar projects to minimize temperature, prevent overheating, and prevent lightning.
- Remain up to date on legislative and regulatory changes for consideration in the development of policies and operational frameworks to support future regulations.

2.2.2 RISK FROM INVESTMENT OF SECURITIES HOLDERS

(1) RISK FROM THE COMPANY'S INABILITY TO PAY DIVIDENDS IN ACCORDANCE WITH THE POLICY

The Company has a policy to pay dividends to shareholders of not less than 40.0% of the net profit

in the consolidated financial statements after deduction of corporate income tax and legal reserve for each year, taking into account the current financial status, cash flow, liquidity, investment plans and other factors as deemed appropriate by the Board of Directors. Such dividend payment must not affect the normal operation of the Company significantly and are subject to the laws, regulations or rulings relating thereto. The resolution of the Board of Directors to approve the dividend payment must be proposed for approval from the shareholders' meeting, except for the interim dividend payment which the Board of Directors is authorized to pay for interim dividends and will report to the shareholders' meeting. The ability of the Company to declare the dividend payment is based on the financial statements at the end of each fiscal year, and the dividend payment cannot exceed the retained earnings as shown in the separate financial statements of the Company and in compliance with related laws.

In addition, the Company's ability to pay dividends depends on the dividends paid by the joint venture companies in which it invests in but is not a major shareholder. As a result, the Company lacks control over management and ability to fully determine dividend payout. The Company, therefore, cannot guarantee that it will be able to pay dividends to shareholders in accordance with the policy.

In addition, the Public Company Act stipulates that the dividends shall not be paid if the Company has accumulated losses although the Company has earned a net profit in that year. Even if the Company has earned a net profit for any particular year, the Public Company Act and the Articles of Association of the Company stipulates that in case the Company has a net profit in any year, the Company is required to set aside a statutory reserve of not less than 5.0% of its net profit after deducting accumulated deficit brought forward (if any) until the reserve fund reaches the amount not less than 10.0% of the registered capital. If the Company is not profitable enough, or if the Company otherwise deems it appropriate, the Company may not pay dividends.

2.2.3 RISK FROM FOREIGN SECURITIES INVESTMENT (IN CASE THE ISSUER IS A FOREIGN COMPANY)

- None -



SUSTAINABILITY BUSINESS

3.1 SUSTAINABILITY MANAGEMENT POLICY AND TARGETS

WHA Utilities and Power Public Company Limited (the Company), a subsidiary of WHA Corporation Public Company Limited (the Group), has implemented a five-year Sustainability Framework beginning in 2020. The purpose is to facilitate the establishment of a framework that will steer the organization's development toward sustainability, all within the context of our commitment to being "Your Ultimate Solution Partner." To accomplish such a purpose, the Group has set a development framework based on good corporate

governance principles, human resources development, digital transformation, and natural resource conservation. The long-term corporate sustainability management objectives are linked to key sustainability challenges for the business and its stakeholders. Additionally, the Company considers the outcomes of risk and opportunity analysis for various global situations and concerns that may happen in the future to guarantee that such development frameworks are effective and appropriate for the situations.



BUSINESS DIRECTION

“YOUR ULTIMATE SOLUTION PARTNER”

Corporate
Value



NATURAL RESOURCES

- Double the reclaimed industrial water for industrial use from 30,200 cubic meter/day in 2020 to 60,400 cubic meter/day by 2025

Corporate
Value



DIGITIZATION

- Revenue generation and cost reduction from innovation projects
- 100% data breach prevention in terms of data leaks, thefts or losses of both inbound and outbound data are achieved in 2025

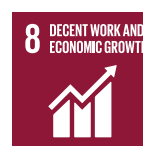
Corporate
Value



HUMAN CAPITAL

- Maintain Human Capital Return on Investment at 14.0 times by 2025
- 7% overall turnover rate in 2025
- 5% talent turnover rate in 2025

Corporate
Value



GOVERNANCE

- 100% acknowledgement and communication of Code of Conduct to subsidiary, employees and suppliers/contractors by 2025
- 100% employees at all levels are trained on risk management by 2022
- Maintain market share for industrial development at over 40%
- 95.27% customer satisfaction score in 2021

Corporate
Value



Given that investing in various projects may involve risks that could adversely affect the Company's business operations, and given that sustainable development in the environment, society, and corporate governance is a key issue that has gained increased attention in recent years, the Company requires that sustainability issues be considered during the initial stages of the investment planning process. The Company will prioritize these issues

when determining the direction of its operations and will use them as a basis for investment decision-making in various long-term value-creating projects. Additionally, they helps build trust and confidence among stakeholders by bringing environmental, social, and good corporate governance issues to light at each level of the project development process, as well as at each stage of the business operation.

3.2 IMPACT MANAGEMENT TO STAKEHOLDERS IN THE BUSINESS VALUE CHAIN

BUSINESS VALUE CHAIN

The Company is focused on optimizing the efficiency of the entire business chain, which includes giving weight to the viewpoints of all stakeholders to foster positive relationships and transparent operating process, which are key for long-term business growth. The Company's value chain has been divided into the following business groups :

Business Group	Upstream	Business activity	Downstream
Utilities Business	<ul style="list-style-type: none"> Raw water procurement 	<ul style="list-style-type: none"> Water production Wastewater Management 	<ul style="list-style-type: none"> Project maintenance After-sales customer service.
Power Business	<ul style="list-style-type: none"> Purchasing fuel and solar panels. 	<ul style="list-style-type: none"> Power generation Solar rooftop installation 	

Effective supply chain management demonstrates effective collaboration between departments within the Company, as it is a system that spans multiple business sectors. However, as evidenced by past events such as the COVID-19 pandemic, international travel restrictions, economic slowdown, and various rules and regulations, including concerns about the security of personal information stored online, all these factors highlight the importance of an efficient supply chain management system capable of adapting to changing conditions in a timely manner. In this regard, the Company pays attention to environmental, social, and corporate governance issues and is committed to communicating these intents to the Company's partners and contractors as well, since the Company believes that the reputation of its partners and contractors will influence the image and viewpoint of stakeholders toward the Company. To address this issue, the Company has established guidelines for conducting business in a fair

and transparent manner. This will assist partners in developing their competencies and together developing business for sustainable growth.

With a business that requires interaction with many partners and contractors along the value chain, the Company places importance on sustainable business operations and strict compliance with various regulations. As a result, it is responsible for ensuring that the Company's suppliers and contractors also adhere to this philosophy. The Company, therefore, has developed a Supplier Code of Conduct that addresses ethical business practices, basic human rights requirements, including occupational health and work environment management, and ensures that all suppliers and contractors receive public relations communications regarding the Supplier Code of Conduct. The Supplier Code of Conduct is available on the Company's website at <https://www.wha-up.com/en/sustainability/sustainability>

Additionally, as part of the Group's commitment to being the "Ultimate Solution Partner," the Company values the opinions of all stakeholders, both directly and indirectly, through a policy of developing positive relationships and fostering strong and harmonious collaboration, as well as transparent operating processes that include effective communication while adhering to human rights and treating stakeholders fairly. Involvement with all stakeholder groups is important because it enables the Company to understand the expectations and concerns of each party to effectively prevent and mitigate negative effects and leverage positive aspects to maximize benefits while also considering the interests of other stakeholders, which is a fundamental factor for success in sustainable business operations.

Stakeholders in a Company's value chain can be individuals, groups, or organizations, which can have a significant impact on the Company's business operations, products, services, and related performance. The process of defining stakeholder groups will consider each stakeholder group's level of involvement, whether direct or indirect, in the Company's business, products, and services, as well as their influence or impact on the Company's business strategy or decision-making. The stakeholders are classified into 8 groups as follows :

1. Employee
2. Shareholder/Investor
3. Customer
4. Business partner/Creditor
5. Public Sector
6. Community
7. Financial institutions
8. Mass media

The Group has developed guidelines for stakeholder management to enable it to plan adequately for the creation and development of positive relationships with each stakeholder based on the situation and environment. The following procedure and steps are included :

1. **Identifying and assessing the importance of stakeholders** based on the impact of the Group's operations and the influence that stakeholders have on the Group's operations, as well as designating the person accountable for management

2. **Analysis of stakeholder groups' issues** based on information gathered through listening to stakeholders' opinions and concerns via various participation activities and communication channels to analyze each stakeholder group's needs, expectations, and concerns, as well as the risks and opportunities associated with each stakeholder group, to develop a management plan.
3. **Management plan** covers preparing development plans and stakeholder engagement plans, engaging constructively with each stakeholder group, communicating with stakeholders closely and frequently to ensure a correct understanding, and responding to and resolving issues or developing new approaches to reach a mutually acceptable solution.

For more information about the Stakeholder Engagement Policy, please visit the Company's website at <https://www.wha-up.com/en/sustainability/sustainability>

3.3 SUSTAINABILITY MANAGEMENT IN ENVIRONMENTAL DIMENSION

The Company has a policy to conduct business in a way that is sustainable for surrounding communities and the environment, and it recognizes the importance of environmental management and resource conservation in accordance with the aforementioned policy framework. The Company places a premium on the adoption of an effective environmental management, which includes proactive management and control through continuous monitoring of key environmental variables. This includes accountability for biodiversity, the quality of wastewater management, air pollution, and resource conservation. The variables listed above are related to the nature of the Company's business operations in the surrounding community.

The guidelines for developing the Company's sustainable business operations are consistent with the Company's Quality and Environmental Policy. This policy demonstrates the Company's intent to prevent and mitigating environmental impacts, as well as quality development and supervision, to ensure that operations adhere to the requirements and guidelines of international



standards, including the International Organization for Standardization(ISO)'s Environmental Management System Standard (ISO 14001) and Quality Management System Standard (ISO 9001), which is considered a framework for environmental management in accordance with the same guidelines.

To this end, the Company has established a Quality and Environmental Policy that serves as a guideline for all the Company's executives and employees. The Company's Quality and Environmental Policy is detailed at <https://www.wha-up.com/en/sustainability/sustainability>

ENVIRONMENTAL STANDARDS AND PERFORMANCE

ENVIRONMENTAL MANAGEMENT SYSTEM CERTIFICATION

The Company has been certified for its international standards by the International Organization for Standardization with an outstanding achievement of the Environmental Management System Standard (ISO 14001) certification, which demonstrates the company's environmentally conscious business practice.

ENVIRONMENTAL IMPACT ASSESSMENT (EIA)

The Company strictly adheres to the terms and conditions stipulated in the Enhancement and Conservation of National Environmental Quality Act B.E. 2535. For all the Company' projects, data analyses are required to prepare an Environmental Impact Assessment (EIA) report. The EIA will analyze the impacts on the environment and society in the area within a radius of 5 kilometers surrounding the project to ensure that they are examined and that risks are appropriately mitigated and controlled. The EIA must be approved by the Office of Natural Resources and Environmental Policy and Planning (ONEP) prior to commencement of construction and operation.

The Company also monitors environmental measures to ensure they adhere to the guidelines established in the EIA. Each project's outcomes are audited and reported to the Industrial Estate Authority of Thailand (IEAT), the Office of Natural Resources and Environmental Policy and Planning, and local government agencies. No indicator has been discovered to date that exceeds the standards established by environmental law. Additionally, the Company monitors its customers' and industrial operators' environmental

management policies to ensure that appropriate practices and compliance with various requirements are followed; if not, the Company will coordinate with the Industrial Estate Authority of Thailand to take appropriate additional measures.

ENERGY MANAGEMENT

The Company realizes the importance of energy management. As a result, an Energy Conservation Policy has been established to demonstrate the necessity of energy conservation projects in the Company. This policy covers the conduct of employees, including the management of the Company's buildings or utilities, in accordance with the Building Control Act, B.E. 2540 and the Enhancement and Conservation of National Environmental Quality Act, No.2, B.E. 2550. In this regard, the Energy Board is responsible for conducting energy management audits.

Additionally, the Company is committed to reducing energy consumption and increasing the use of renewable energy across its value chain, particularly solar energy, where the Company provides a comprehensive suite of rooftop solar power generation services to customers through long-term energy purchase agreements without incurring any upfront costs, including design, licensing, installation, long-term operation, and maintenance. When the customer is not required to prepare for the system's investment and maintenance costs, the Company's services assist the business in becoming a member of the clean energy cycle. Additionally, roof solar power systems

are regarded to be more cost effective and environmentally friendly than conventional power generation systems. The Company has installed solar panels on the roof of a water purification plant at WHA Eastern Industrial Estate (Map Ta Phut) (WHA EIE), which has reduced traditional electricity consumption by 454,054 kWh per year, and solar panels on the roof of a garage at ESIE Plaza1 and 2 nearly Eastern Seaboard Industrial Estate (ESIE) and WHA Eastern Seaboard Industrial Estate (WHA ESIE 4) can reduce traditional electricity consumption by 362,714 kWh per year. The Company has studied the installation of solar panels and batteries project, which resulted in a reduction of 1,150 MWh per year, or 4 million baht per year in electricity usage from the traditional system. The Company's long-term objective is to contract and provide energy systems service totaling 300 MW of rooftop solar power by 2023, up from 133 MW of accumulated solar power purchase agreements by the end of 2022.

WATER MANAGEMENT

The Company's water resource management is in accordance with the guidelines set forth in the Quality and Environmental Policy, which has been approved by the management team. The aforementioned policy provides a framework for maintaining an appropriate water balance while minimizing negative environmental impacts. The Company's water management is supervised by the Industrial Estate Operator (IEO) Department, which ensures that the Company complies with all water management requirements set forth in the notification of the Ministry of Natural Resources, the Environment





and the Industrial Estate Authority of Thailand Act B.E. 2522 and the Factory Act B.E. 2535. Additionally, the standards are monitored by examining the water quality control parameters specified in the Environmental Impact Assessment (EIA).

In this regard, the Company distributes and produces industrial water for customers, recognizing the importance of having sufficient water for company operations and the fact that industrial operators must also share water with the community and the environment. The Company has established a long-term goal of doubling the effectiveness of industrial water reclamation from 30,200 cubic meters per day in 2020 to 60,400 cubic meters per day in 2025. This will assist in reducing the amount of water extracted from natural sources. Additionally, the Company has implemented the 3R (Reduce, Reuse, and Recycle) and Circular Economy principles by recycling treated water for cleaning and improving the industrial estate's landscaping.

In addition, the Company also pays attention to the development of wastewater treatment systems in the surrounding communities. This dedication is reflected in the "Clean Water for Planet" Project, which was launched in 2016 with the primary objective of raising public awareness of the importance of water resources and transferring knowledge to foster a proper understanding of the importance of preserving valuable natural resources. The Company initiated the construction and delivery of a wastewater treatment system to the community to

improve the water quality in the canals. The wastewater treatment method utilizes an artificial swamp system to aid in wastewater treatment by utilizing biological processes carried out by aquatic plants and microbes. This method is environmentally friendly, low-cost, and simple to maintain. This project was inspired by the royal initiatives of His Majesty King Bhumibol Adulyadej Maha Bhumibol Adulyadej the Great (King Rama 9). The Company has delivered a wastewater treatment system to Pluak Daeng Subdistrict Administrative Organization, Rayong Province, which is used to treat water from the upstream of the Hin Loi Canal, which flows through densely populated community areas. The system can treat 400 cubic meters of wastewater per day and can reduce organic matter in wastewater by more than 80%.

GREENHOUSE GAS MANAGEMENT

Climate change has the potential to impact both business operations and the environment; thus, the Company is committed to reducing its carbon footprint, which is one of the primary contributors to rapid climate change. Because the Company's power generators and other vehicles emit direct greenhouse gas emissions (Scope 1), the Company has installed a Control Cable Alarm System and a SMART meter to help reduce traffic trips back and forth to inspect the site. This contributes to a reduction in fuel consumption, which is equivalent to a reduction in greenhouse gas emissions Scope 1. Simultaneously, indirect greenhouse gas emissions (Scope 2) from electricity usage contribute significantly to the Company's Environmental footprint.

The Company has advocated for the use of renewable energy to contribute to the reduction of greenhouse gas emissions. In this regard, the Company provides rooftop solar energy system installation and maintenance services for its customers. In 2022, the Company began selling electricity to customers via solar rooftop systems. This equates to a decrease of more than 31,599 tons of carbon dioxide equivalent in greenhouse gas emissions. When compared to the organization's Scope 1 and Scope 2 greenhouse gas emissions, it is determined that the Company can achieve carbon neutrality in the previous year.

The Company is aware of the risks that climate change poses to its operations and those of its customers, which may result in business interruption or asset damage. As a result, climate change risk assessment has been formed as a component of enterprise risk management with the following objectives :

- Identify key risks by level of hazard, likelihood of occurrence, and its relevance to operations
- Understand the impact of climate change on business operations
- Evaluate the effectiveness of existing mitigation measures
- Find solutions to future climate change-related concerns

In 2022, the Company generated 356 tons (or kilograms) of direct GHG emissions and 12,083 tons (or kilograms) of indirect GHG emissions. These are equivalent to a total of 12,439 tons (or kilograms) of annual carbon dioxide emission, verified by LRQA (Thailand) Limited.

WASTE MANAGEMENT

As a utility service provider, the Company generates industrial waste from water treatment operations and wastewater that is classed as non-hazardous waste, which includes solid waste and sludge. Hazardous waste is waste that is contaminated with oil or chemicals during the manufacturing and treatment of industrial water.

The Company has adopted a Quality and Environmental Policy, which includes the implementation of the Group's waste management practices as described in the Environmental Impact Assessment (EIA) as a guideline for waste management in the workplace. The Company has formed a Waste Management Working Group to oversee and monitor waste management according to legal requirements. The Waste Management Working Group will investigate and classify each sort of waste generated by the Company's business operations, as well as promote efficient waste management policies. By 2025, the Company intends to reduce waste sent to landfills or incinerated to zero without converting it to energy.

3.4 SUSTAINABILITY MANAGEMENT IN SOCIAL DIMENSION

The Company has established policies for social, community, and environmental responsibility in a sustainable manner by disclosing matters that the Company has already implemented, including both the corporate social responsibility in processes (CSR In Process) and separate social responsibility activities (CSR After Process). The Company communicates public relations through various channels to inform stakeholders about the Company's policy, vision, mission, and strategy for social responsibility operations. The Company is committed to incorporating corporate social responsibility (CSR) into every step of the business process, both in terms of new project creation and day-to-day operations.

The Company has formulated a strategy to develop sustainable social projects covering all 3 dimensions, namely education development, community health care, and knowledge development on environmental conservation to meet the community's needs and concerns. In addition, the Company has conducted an Environmental Impact Assessment (EIA) of the project's business operations, including assessments on community perceptions, and social and environmental impacts in the surrounding communities. According to the assessment results,



both companies have guidelines in place for effective mitigation management via a variety of communication channels. These include phone calls, emails, engagement events, surveys, appointments with local community representatives, and a whistleblowing platform (See the Code of Conduct for details). All comments, suggestions and complaints will be reviewed by the Corporate Social Responsibility Committee. Monthly meetings will be held to establish appropriate development guidelines and then report to the Board of Directors.

GROUP'S CSR ACTIVITIES IN THE PAST :

- Social and health promotion activities, such as those to assist society during the COVID-19 pandemic, in which the Group set up places to serve as a field hospital and vaccination site, as well as mobile health service units and blood donation.
- Educational activities such as donations to educational institutions, scholarship, support for dual vocational training), art camp, and English camp.
- Environmental activities, such as the establishment of a regulatory committee for the environment, establishment of an environmental network, environmental education and training, as well as provision of knowledge to help the community create additional jobs and careers, such as the initiative to convert water hyacinth into fibers that may be combined with fibers from plastic items and natural cotton fibers to create a canvas for sewing. The project is a collaboration with PTT Global Chemical Public Company Limited, and the materials will be used to create bags and baskets for New Year's gift sales. This can provide revenue for the community. Additionally, it is anticipated that this will lower the cost of water hyacinth control within the Group.

GROUP'S CSR UPCOMING ACTIVITIES :

- Upcycling School Bag Project
- Clean Water for Planet Learning Center Project



For more information about the Company's operations in driving business for sustainability in Sustainability Report 2022, please visit the Company's website at <https://www.wha-up.com/th/sustainability/sustainability-report>



MANAGEMENT DISCUSSION AND ANALYSIS (MD&A)

4.1 OPERATION, FINANCIAL CONDITION AND MATERIAL CHANGES

1. EXECUTIVE SUMMARY

WHA Utilities and Power Public Company Limited (“WHAUP” or “the Company”) announced the 2022 results, with Normalized Net Profit of THB 448.0 million decreased by 48.3% compared to 2021 and Net Profit of THB 454.1 million, dropped by 38.3% from 2021.

(Unit : Million Baht)

Consolidate Financial Statement	2022	2021	% Change
Total Revenue	2,443.0	2,180.8	12.0%
Gross Profit	782.1	704.6	15.2%
Normalized Share of Profit and Dividend Income from Investments in Associated	310.5	802.2	-61.3%
Net Profit attributable to Owners of the Parent	454.1	735.5	-38.3%
Normalized Net Profit attributable to Owners of the Parent ¹	448.0	866.4	-48.3%

¹ Normalized Net Profit attributable to Owners of the Parent is Net Profit attributable to Owners of the Parent excluding Foreign Exchange Gain/Loss and related tax

In 2022, the Company had Normalized Net Profit of THB 448.0 million or decreased by 48.3% when compared with 2021, mainly due to lower Normalized Share of Profit from power business because SPP business had impact from higher gas cost while Ft adjustment does not fully reflect such growing cost resulting to lower margin from electricity selling to industrial user (IU)

For **Domestics Utilities Business**, utilities sale volume grew by 3.9% from 2021 mainly due to increasing of Value-added product, Raw Water and Wastewater management thanks to higher water demand from power customer who additionally achieved commercial operation date in 2022 and existing customers together

with an increase of revenue from Excessive Charge. These factors resulted in a 9.6% year-on-year growth in revenue from utilities business.

For **International Utility Business**, utilities sale volume increased by 26.3% from 2021, thanks to the growing demand from Duong River project, which increased by 25.6% from 2021, due to economic recovery from the Covid-19. However, the Share of Loss in Vietnam increased by 2.6% due to a THB 6.2 million higher in Allowance for Accounts Receivable, higher financial cost and THB depreciation when compared with 2021.

For **Power Business**, the Company had Normalized Share of Profit of THB 485.7 million or decreased by 48.2% compared with 2021, mainly from lower Normalized Share of Profit from SPP business due to higher gas cost and from IPP business due to GHECO-One's plant shutdown for maintenance and higher coal cost. Meanwhile, solar rooftop business significantly grew in 2022. It can be seen from higher revenue by 30.2% compared with 2021. Higher revenue were derived from Private PPA projects thanks to growing of Solar projects that have achieved commercial operation date (COD) and revenue from solar rooftop installation (EPC Service).

SIGNIFICANT EVENTS IN 2022

- For the progress of Peer-to-Peer Energy Trading, the Company has revealed Renewable Energy Exchange (RENEX) platform, which facilitates the purchasing and selling of electric power between prosumers and consumers through Blockchain technology. In 2022, the Company attended the Pre-Trade Session, which had over 21 companies in attendance. In addition, Peer-to-Peer Energy Trading is contained in the ERC Sandbox project in phase 1 and 2. Currently, phase 1 is waiting to be approved for starting the Peer-to-Peer Energy Trading and expect to start within 2023.
- In 2022, the Company signed additional Solar Power Purchase Agreement of 31 agreements which can be divided to Private PPA of 26 agreements in totaling installed capacity of 41 MW and solar rooftop installation (EPC service) projects of 5 projects in totaling installed capacity of 9 MW, bringing the total contractual capacity of Solar Private PPA to 133 MW and total contracted capacity in proportion to equity of the overall power portfolio to around 683 equity MW.
- In 2022, the Company has an additional solar rooftop project with capacity of 41 MW which are achieved commercial operation date (COD), bringing total solar capacity which already COD to 94 MW
- The Company issued No. 1/2022 debentures worth THB 1,000 million in January, 2022, with 1-year tenor and 1.48% interest rate p.a. and No. 2/2022 debenture worth THB 2,800 million in June, 2022, with interest rate of 3.06-3.71% p.a. For No.2/2565 debentures, there are 2 tranches with details outlined as follow :
 - Tranche 1 is THB 1,800 million, 3-year bond with 3.06% interest rate p.a.
 - Tranche 2 is THB 1,000 million, 5-year bond with 3.71% interest rate p.a.

The debentures tranches 1 is a Green Bond which is offered for the first time. The successful in this offering reflected investor's confidence in the company's business fundamentals, financial strengths, and the company's commitment to do the business with environmental care and towards to sustainable development which has always been the core of the Company's business operations.

In December 2022, the Company issued No. 3/2022 debentures worth THB 1,500 million, with 2.75-3.50% p.a. For No. 3/2022 debentures there are 2 tranches with details outlined as follow :

- Tranche 1 is THB 750 million, 2-year bond with 2.75% interest rate p.a.
- Tranche 2 is THB 750 million, 5-year bond with 3.50% interest rate p.a.

AWARDS IN 2022

- The Company was awarded the Best Innovative Company Awards from SET Awards 2022 in Best Innovative Company Awards category for the project Peer-to-peer Energy Trading : the Future of Energy Market. This is the first platform that fully allows entrepreneurs to buy and sell electricity from solar energy at any given price, through Blockchain technology which serve as database, data evaluate and data storage. Receiving of this award made this company get Innovative Company award for the second consecutive year.

- The Company was listed on Thailand Sustainability Investment (THIS) in the “Resource” category for third consecutive year. This reflects the company’s potential to grow a sustainable business with good corporate governance, as well as to create value for its stakeholders including Environmental, Social and Governance (ESG)

2. OPERATING RESULTS

(Unit : Million Baht)

Consolidate Financial Statement	2022	2021	% Change
Total Revenue	2,443.0	2,180.8	12.0%
• Utilities Business	2,111.4	1,926.2	9.6%
• Operating Revenue ¹	1,986.6	1,914.4	3.8%
• Other Revenue from Utilities Business ²	124.7	11.8	955.7%
• Power Business	331.6	254.6	30.2%
Costs of Sales and Services	(1,660.9)	(1,476.2)	-12.5%
Gross Profit	782.1	704.6	11.0%
Gross Profit from Operation³	657.3	692.8	-5.1%
Other Income ⁴	95.4	83.8	13.8%
Gain/(Loss) from Financial Assets	(8.2)	0.0	N/A
Expected credit Gain/(Loss) on Financial Assets	10.1	1.2	74.8%
Gain/(Loss) from Revalue Investment ⁵	23.5	(20.7)	-213.6%
Administrative Expenses	(278.5)	(233.8)	19.1%
Gain/(Loss) from Exchange Rate ⁶	133.1	306.6	-56.6%
Share of Profit from Investments in Associated and Joint Ventures	155.9	317.3	-50.9%
Financial Costs	(413.1)	(409.3)	0.9%
Income Tax (Expenses) Income	(45.8)	(14.3)	221.4%
Profit attributable to Owners of the parent	454.1	735.5	-38.3%
Foreign Exchange Loss/(Gain) ⁷	(5.6)	128.3	-104.3%
Income Tax Related to FX gain ⁸	(0.5)	2.6	-121.5%
Normalized Net Profit⁹	448.0	866.4	-48.3%

¹ Operating Revenue consists of Raw water sales, Industrial Water Sales and Wastewater Treatment Services.

² Other Utilities Revenue consists of Excessive Charge and Service Fees for Wastewater Management

³ Gross Profit from Operation excludes Other Revenue from Utilities Business

⁴ Interest Income, Dividend Income from GIPP is an example of Other Income

⁵ Loss from Revalue Investment is derived from investment in GIIPP from applicable of TFRS9 accounting standard

⁶ Foreign Exchange (Gain)/Loss consists of unrealized and realized Loss (Gain) on exchange rate from USD Loan from Subsidiaries

⁷ Foreign Exchange Gain/(Loss) consists of unrealized and realized Loss (Gain) on exchange rate from USD Loan from Subsidiaries and Associates

⁸ Income Tax Related to FX Gain is derived from Gain on exchange rate from USD Loan to related parties.

⁹ Normalized Net Profit is Profit attributable to Owners of the Parent excluding Foreign Exchange Gain/Loss and related tax



TOTAL REVENUE

Total Revenue was THB 2,443.0 million in 2022 or increased by 12.0% from 2021 mainly due to higher revenue from utilities business and power business. Revenue from utilities business increased by 9.6% mainly from revenue from Excessive Charge, Raw Water, and Value-added product.

In addition, Revenue from Power business increased from additional Solar projects achieved commercial operation (COD) and revenue from Solar rooftop installation (EPC Service) resulting in a 30.2% increase in revenue from power business when compared with 2021.

GROSS PROFIT AND GROSS PROFIT FROM OPERATION

Gross Profit was THB 782.1 million in 2022, up 11.0% from THB 704.6 million in 2021. Gross Profit from Operation was THB 657.3 million in 2022, decreased by 5.1% from THB 692.8 million in 2021.

Higher Gross Profit was mainly from higher revenue from utilities business and power business, especially, revenue from Excessive Charge, Raw Water, and Solar business.

Share of Profit and Dividend Income from Investments in Associates and Joint Ventures (“Share of Profit and Dividend Income from Investment”)

(Unit : Million Baht)

Share of Profit and Dividend Income from Investment	2022	2021	% Change
Share of Profit and Dividend Income from Investment :	191.2	367.3	-47.9%
• Utilities Business	(210.6)	(204.1)	-3.2%
• Power Business	401.8	571.4	-29.7%
Adjustment Items :			
- Foreign Exchange Loss/(Gain) related to Share of Profit	119.3	434.9	-72.6%
Normalized Share of Profit and Dividend from Investment¹ :	310.5	802.2	-61.3%
• Utilities Business	(210.6)	(204.1)	-3.2%
• Power Business	521.0	1,006.3	-48.2%

¹ Normalized Share of Profit and Dividend from Investment is adjusted from Share of Profit by excluding Foreign Exchange Loss /(Gain)

Normalized Share of Profit and Dividend Income from Investments was THB 310.5 million in 2022, down by 61.3% from 2021 mainly due to a lower contribution of Normalized Share of Profit from SPPs business from rising gas cost result in lower margin from electricity sold to industrial users, together with lower contribution from GHECO-One and higher Share of Loss from Duong River project.

NET PROFIT ATTRIBUTABLE TO OWNERS OF THE PARENT

Net profit attributable to Owners of the Parent was THB 454.1 million in 2022. A decrease by 38.3% from THB 735.5 million in 2021 were mainly due to

- A decrease in Share of Profit and Dividend income from investment of THB 161.4 million mainly due to a decrease in share of profit from SPP business. However, if FX impact and related income tax were excluded, the Company would realize a lower Normalized share of Profit and Dividend income from investment of THB 155.3 million.

- A decrease in Unrealized Gain on Foreign Exchange rate from foreign currency loans of Subsidiaries of THB 173.5 million.

Despite a positive factors, causing Net profit to increase from higher Gross Profit of THB 77.5 million derived from Excessive charge revenue and revenue from utilities business especially from Raw water and Value-Added water.

NORMALIZED NET PROFIT

The Normalized Net Profit attributable to Owners of the Parent is Net Profit attributable to Owners of the Parent adjusted by Foreign Exchange Gain/(Loss) and Income Tax related to Foreign Exchange Gain on USD Loan.

In 2022, there was Foreign Exchange Gain of THB 6.1 million. As a result, the Company reported Normalized Net Profit of THB 448.0 million, decreased by 48.3% when compared with 2021.

3. PERFORMANCE BY UTILITIES

3.1 UTILITIES BUSINESS

Details of Total Revenue and Share of Profit are as below.

(Unit : Million Baht)

Utilities Business	2022	2021	% Change
Total Revenue from Utilities Business	2,111.4	1,926.2	9.6%
- Industrial Water Sales	1,221.4	1,228.7	-0.6%
- Raw Water Sales	424.2	372.0	14.0%
- Value Added Water Sales	178.6	149.8	19.2%
- Wastewater Treatment Service	162.5	163.9	-0.9%
- Other Income from Utilities Business ¹	124.7	11.8	955.7%
Share of Profit from Utilities Business²	(210.6)	(204.1)	-3.2%
Total Revenue and Share of Profit from Utilities Business	1,900.8	1,722.1	10.4%

¹ Other Utilities Revenue consists of Excessive Charge, Service Fees for Wastewater Management

² Share of Profit from Utilities Business consists of Share of Profit from investment in Utilities Companies namely Cua Lo, SDWTP and AIE

For 2022, Total Revenue and Share of Profit from Utilities Business was THB 1,900.8 million, increased by 10.4 from THB 1,722.1 million in 2021, mainly due to an increase in revenue from Excessive Charge, Value-Added Water,

and Raw Water thanks to growing water demand despite an increase in Share of Loss of THB 6.5 million from Investments.

Details of Total Domestic Utilities Sales Volume in Thailand and aboard are as follow.

(Unit : Million Cubic Meters)

Total Domestic Utilities Sale Volume	2022	2021	% Change
Raw Water Sales Volume	25.7	22.4	14.7%
Industrial Water Sales Volume ¹	49.1	49.6	-1.0%
Value Added Water Sales Volume ²	5.3	4.4	21.0%
Wastewater Treatment Service Volume	36.8	36.1	1.8%
Total Domestic Utilities Sales Volume	116.8	112.5	3.9%

¹ Industrial Water consists of process Water and Clarified Water

² Value Added Water consists of Demineralized Water and Premium Clarified Water



3.2 POWER BUSINESS

The Company had Total Revenue, Share of Profit and Dividend Income from Investments in Power Business of THB 733.4 million in 2022, decreased by 11.2% when compared to 2021, and Normalized Total Revenue, Share of Profit and Dividend Income from Investments in Power Business was THB 852.6million, decreased by 32.4%

mainly due to higher gas cost whereas Ft adjustment does not fully reflect such growing cost resulting in lower Normalized Share of Profit from SPP and also higher coal cost and unplanned maintenance causing lower Normalized Share of Profit from GHECO-One.

(Unit : Million Baht)

Power Business	2022	2021	% Change
Revenue from Power Business	331.6	254.6	30.2%
Share of Profit from Power	366.4	521.4	-29.7%
Dividend Income	35.4	50.0	-29.3%
Total Revenue, Share of Profit and Dividend Income from Investments in Power Business	733.4	826.1	-11.2%
Normalized Total Revenue, Share of Profit and Dividend Income from Investments in Power Business¹ :	852.6	1,261.0	-32.4%
- IPP	155.4	228.3	-31.9%
- SPP	367.6	744.7	-50.6%
- Renewable Energy ²	342.3	284.6	20.3%
- Others ³	(12.6)	3.4	-471.0%

¹ Normalized Share of Profit is excluding Foreign Exchange Gain/Loss

² Renewable Energy consists of Solar rooftop projects and Chonburi Clean Energy (CCE)

³ WHA Natural Gas Distribution Projects (WHA NGDPs) is a collaboration among WHAUP GULF and MITG

By sorts of plant, details of Total Revenue from Power Business and Share of Profit and Dividend Income from Investments are as follows.

3.2.1 INDEPENDENT POWER PRODUCER (IPP)

- 3 IPPs generated THB 155.4 million Normalized Share of Profit and Dividend Income from Investments in 2022. A decrease by 31.9% from 2021 were mainly from Gheco-One due to higher coal cost and higher unplanned maintenance than occurred in 2021. GHECO-One had the unplanned maintenance of 52 days in 2021 compared to unplanned maintenance 59 days in 2022.

3.2.2 SMALL POWER PRODUCER (SPP)

- 8 SPPs generated THB 367.6 million Normalized Share of Profit and Dividend Income from Investments in 2022. A decrease of THB 50.6 million from 2021 were mainly because gas price increased

meanwhile Ft has not been adjusted to fully reflect all the aforementioned cost increases resulting in lower margin from electricity dispatch to industrial users. Moreover, electricity dispatch to EGAT and industrial users also decreased.

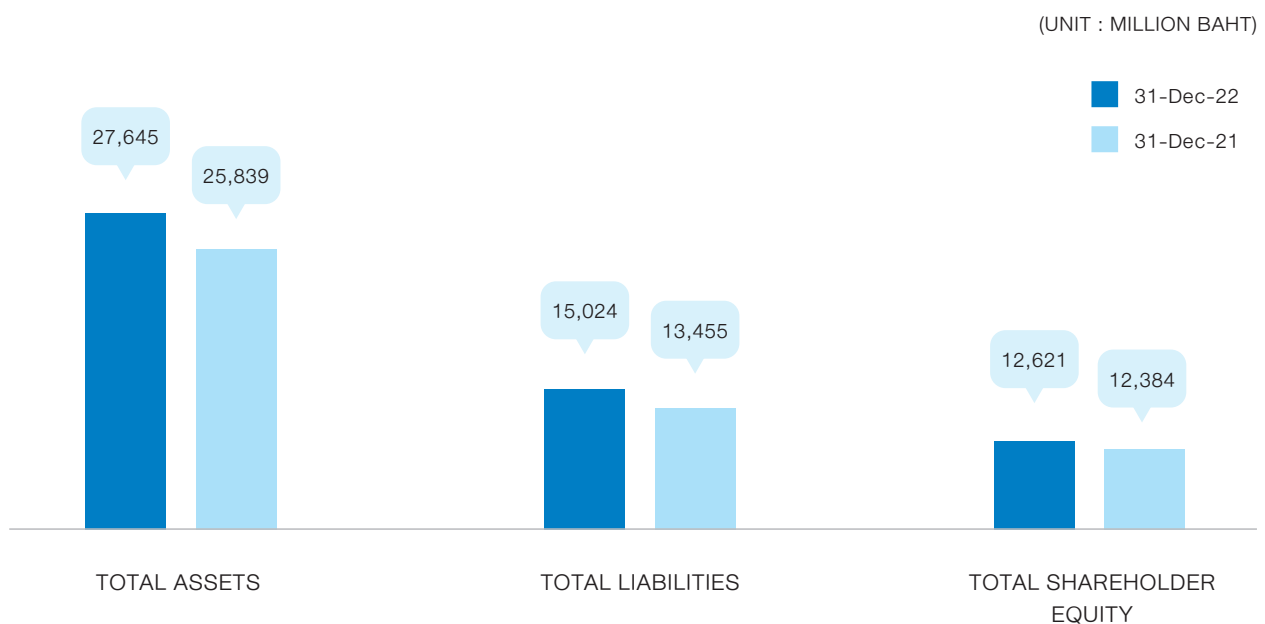
3.2.3 RENEWABLE ENERGY

Total Revenue and Normalized Share of Profit from Renewable Energy improved year-on-year. There were mainly due to higher revenue from Solar Rooftop installation (EPC Service) and Private PPA which derived from additional solar projects achieved commercial operation date.

- The Company had total Revenue and Normalized share of profit from Renewable Energy of THB 342.3 million in 2022, increased by THB 57.7 million from 2021. These key factors were from solar rooftop project guardually achieved commercial operation and higher revenue from EPC Service.

4. FINANCIAL POSITION

The Consolidated Balance Sheet as of 31 December 2022 is summarized as follows.





ASSET

As of 31 December 2022, the Company's total assets were THB 27,645 million, increased by THB 1,807 million from THB 25,839 million at year-end 2021, mainly due to

- 1) A decrease in Cash and Cash Equivalents of THB 183 million are as details below,
 - Cash generated from operating activities : +THB 781 million.
 - Cash use in investing activities : -THB 1,516 million. The major account was cash paid for purchase of Lands, Property, Plant and Equipment by THB 1,430 million.
 - Cash generated in Financing activities : +THB 540 million mainly due to new debentures issuance of THB 5,300 million and short-term loan from financial institution of THB 1,500 million partly offset by dividend paid to shareholders of THB 841 million, repayment to debenture of THB 1,500 million and repayment to short-term and long-term loan of THB 3,900 million.
- 2) An increase in Investment in Joint Venture of THB 632 million was mainly from an increase of fair value of interest rate swap derivatives, which was measured as required under TFRS 9 and recorded within other components of shareholders' equity.
- 3) An increase in Other Assets of THB 1,357 million were mainly from increase of Property, Plant and Equipment of THB 1,067 million and increase of Right of Use Asset of THB 123 million.

The key elements of Assets in the Company's Consolidated Financial Statements consisted of

- (1) Investments in Associates amounted THB 14,321 million
- (2) Goodwill amounted THB 2,773 million
- (3) Intangible Asset amounted THB 1,908 million
- and (4) Cash and Cash Equivalents amounted THB 721 million.

LIABILITIES

As of 31 December 2022, the Company's total liabilities were THB 15,024 million, increased by THB 1,569 million from THB 13,455 million at year-end 2021 which mainly due to new bond issued in the year 2022 amounted of THB 5,300 million and short-term loan of THB 1,500 million, Repayment to debentures of THB 1,500 million and repayment long-term and short-term loan of THB 3,900 million.

As of 31 December 2022, the Company's Interest-bearing Debt was THB 13,500 million, increased by THB 1,399 million from THB 12,101 million at year-end 2021.

Total Liabilities mainly consisted of (1) Debentures amounted THB 11,900 million (2) Short-term Loan amounted THB 1,599 million

SHAREHOLDERS' EQUITY

As of 31 December 2022, the Company's total Shareholders' Equity was THB 12,621 million, increased by THB 237 million from THB 12,384 million at year-end 2021 which mainly due to

- 1) An increase of THB 620 million in Other Components of Equity
- 2) Despite a decrease of THB 416 million in Retained Earnings.

5. PROJECTS UNDER CONSTRUCTION

POWER BUSINESS

As of 31 December 2022, there are solar rooftop projects totalling of 39 MW under construction and scheduled to achieve COD within 2023.

Power plant	Type of Power	Category of producer	Equity holding (%)	Installed Capacity (MW)	Equity Capacity (MW)	Commercial Operation Date
Solar Rooftop	Solar Power	Private PPA	100	39	39	Q1'2023-Q4'2023
Total				39	39	

4.2 POTENTIAL FACTORS OR INCIDENTS THAT MAY MATERIALLY AFFECT THE OPERATION

ECONOMIC AND INDUSTRY OVERVIEW

The global economic situation in 2022 was influenced by the ongoing tension between Ukraine and Russia, which was the primary factor caused natural gas and coal prices rising from 2021. Higher energy costs have had an impact on the Company's performance, particularly for IPP and SPP businesses. As a result of the foregoing, the Energy Regulation Commission (ERC) had announced

a three-time increase in the Fuel Adjustment Charge (Ft) in 2022 to alleviate the impact of rising energy costs.

However, the overall economic situation benefits from the COVID-19 situation's recovery as a result of the global vaccine rollout. As a result, the economy can return to normal situations due to easing of Covid-19 precautions and the international travel restrictions which countries are gradually opened to international visitors. Furthermore, government also launches a policy to relieve a pressure on a high cost of living from inflation compared to 2021, driving businesses to their normal operation and accelerating global market's demand.



Furthermore, there was a significant change in the power sector from the previous year from announcement of a commitment to achieve Net Zero greenhouse gas (GHG) emissions by 2027, by promoting clean energy policy that to reduce greenhouse gas emissions to maintain global's temperature. The Company can take this advantage for expanding its solar rooftop business to grow sustainably amidst global economic fluctuation from energy price and high inflation rate.

FUEL ADJUSTMENT CHANGE (FT)

In 2022, the Energy Regulatory Commission of Thailand (ERC) resolved to increase the automatic variable tariff (Ft) three times, from -15.32 to 1.39, to 24.77, and to 93.43 satang per unit in January, May, and September, respectively. The main reason for the announcement of the Ft increase in 2022 was the increase in fuel prices in line with global energy prices caused by the impact of the Ukraine-Russia conflict and the relief of the COVID-19 situation, which resulted in the recovery of the economy in many countries. Consequently, energy demand is increasing.

The Ft increase announcement had both positive and negative effects on the Company's performance. Positively, Ft increases led to higher electricity prices in the country. As a result, the Company has received positive factors from its renewable energy business, which has grown steadily from the revenue increases in solar power generation projects (private PPAs) that have gradually started commercial operations and new projects signed in the past year since the industry was interested in installing solar panels to reduce electricity purchases from the grid. However, the 2022 Ft increase was insufficient to offset the rising cost of electricity generation. Consequently, the small power plant (SPP) business in which the Company has jointly invested has been affected by rising natural gas costs in terms of electricity sold to industrial customers, while the gradual increase in Ft has not yet completely offset such costs.

In addition, the Ft hike negatively affects the utilities business as it will increase the Company's operational electricity costs. The Company's electricity cost, which is the main cost of selling raw water, industrial water production, and wastewater treatment, accounted for

8.5% of the total cost in 2022, which is higher than the 7.9% in 2021.

TRANDS AND IMPACTS ON ENVIRONMENTAL, SOCIAL, AND GOOD CORPORATE GOVERNANCE

The Company values on business development while also considering the impact on the environment, society, and good corporate governance. It adheres to conducting business within a framework of good governance, transparency, and verifiability and maintains a balance between the economy, society, and environment. In this regard, the Company has established operating principles through various policies such as the Code of Conduct, Policy on Human Rights and Labor Practices, Environmental Quality, Energy Conservation, and Biodiversity Policy, as well as its participation as a member of the Private Sector Collective Action Against Corruption (CAC) of Thailand since 2019, as a guideline for the Company's sustainable business operations, considering the impact of business operations on all stakeholders. The Company has always introduced cutting-edge technology and developed innovations to its business operations, both in the utilities and power businesses. As for the utilities business, the Company has initiated the Clean Water for Planet program for improved water management, focusing on wastewater treatment and further improvement by reusing treated wastewater from communities surrounding the industrial estates of the Group. In addition, the Wastewater Reclamation Project has been developed by transforming treated wastewater into new products to add value and reduce the environmental impact of wastewater discharge into the natural environment. As for the power business, the Company was able to reduce greenhouse gas emissions (CO₂ emissions) by more than 31,600 tons of carbon dioxide through solar power generation projects in the past year.

Through the continuous development of its utilities and power businesses, the Company can reduce environmental and community impacts. Its operational framework is built on the principles of good corporate governance and is consistent with its intention to grow steadily and sustainably by focusing on the environment, society, and good governance.

4.3 SIGNIFICANT FINANCIAL RATIOS

	2022	2021	2020
Return on Equity (%)	3.6%	6.0%	6.3%
Effective Tax Rate (%)	9.2%	1.9%	1.4%
Debt/Equity Ratio (times)	1.19x	1.09x	1.15x
Net Interest-bearing Debt/Equity Ratio (times)	1.01x	0.90x	0.91x
Average Collection Period (Days)	26	26	30

As of 31 December 2022, the Company's Return on Equity was 3.6%, decreased from 6.0% at year-end 2021 due to lower Net profit.

As of 31 December 2022, the Company's Earnings Before Tax was THB 500.0 million and Tax Expense was THB 46.0 million, which was equivalent to 9.2% Effective Tax Rate. As of 31 December 2021, the Company's Earnings before tax was THB 749.8 million and Tax Expense was THB 14.3 million, which was equivalent to 1.9% Effective Tax Rate. When compared 2022 to 2021, the Company has lower Earnings Before Tax, yet higher Effective Tax rate because the Company has an increase in the proportion of income that is not eligible for tax benefits when compared with 2021.

As of 31 December 2022, Debt-to-Equity ratio was 1.19x, increased from 1.09x at year-end 2021. The Net Interest-bearing Debt-to-Equity Ratio was 1.01x, increased from 0.90x in 2021. The changes in the ratio were mainly from an increase in Total Liabilities of THB 1,569.1 million which included an increase in interest-bearing debts of THB 1,398.9 million and a decrease in Cash and Cash Equivalents of THB 183.3 million despite Total Shareholders Equity increased by THB 237.50 million.

As of 31 December 2022, the Company had an average collection period of 26 days which is equal to 2021. The term was within the range of 15-30 days credit term policy which granted to the customers. The Company has monitored and reviewed accounts receivables' outstanding on a regular basis. In addition, Accounts Receivables is accounted for only 1.1% and 1.5% of Total Assets in 2021 and 2022.



GENERAL INFORMATION AND OTHER IMPORTANT INFORMATION

5.1 GENERAL INFORMATION

5.1.1 THE COMPANY

Company Name	: WHA Utilities and Power Public Company Limited
Security Name	: WHAUP
Head office	: 777 WHA TOWER, 22 nd Floor, Unit 2203-2205, Moo 13, Debaratna Road (Bangna-Trad) KM.7, Bang Kaeo, Bang Phli Samut Prakarn 10540 Thailand
Telephone	: +66-2719-9559
Fax.	: +66-2719-9558
Website	: www.wha-up.com
Nature of business	: (1) Utility business of distributing raw water, producing and Distributing industrial water and providing wastewater treatment services to operators in industrial estates and industrial land (2) Power business through investment in power generation business, both domestically and abroad.
Corporate registration no.	: 0107559000401
Registered capital	: THB 3,825,000,000
Issued and Fully Paid-up Capital	: THB 3,825,000,000, consisting of 3,825,000,000 common shares at THB 1 per share
Contact information	: Investor Relations Telephone : +66-2719-9559 ext.221 E-mail : ir@wha-up.com Corporate Secretary Office Telephone : +66-2719-9559 ext.221 E-mail : corporate_secretary@wha-up.com

5.1.2 REFERENCES

Share Registrar	: Thailand Securities Depository Company Limited
Head office	: 93 The Stock Exchange of Thailand Building, Ratchadaphisek Road, Dindaeng Bangkok 10400, Thailand
Telephone	: +66-2009-9999
Fax.	: +66-2009-9991

Debenture Registrar : Bank of Ayudhya Public Company Limited, Rama III Office (Head Office) AA Floor
Head office : 1222 Rama III Road, Bangpongpan, Yannawa Bangkok 10120, Thailand
Telephone : +66-2296-5695
Fax. : +66-2683-1389

Auditor : PricewaterhouseCoopers ABAS Limited
Head office : 179/74-80, 15th Floor, Bangkok City Tower, South Sathorn Road, Bangkok 10120, Thailand
Telephone : +66-2844-1000
Fax. : +66-2286-5050

Legal Advisor : RL Counsel Company Limited
Head office : 62/15 Thaniya, Suriyawongse Sub District, Bangrak District, Bangkok 10500, Thailand
Telephone : +66-2235-3339
Fax. : +66-2235-3076

5.2 OTHER IMPORTANT INFORMATION

- None -

5.3 LEGAL DISPUTES

On 30 September 2021, WHAUP (SG) 2DR PTE. LTD. (WHAUP (SG) 2DR), the subsidiary of the company, had submitted an application to the Vietnam International Arbitration Center (VIAC) to cause Aqua One Water Corporation (Aqua One), a major shareholder of Duong River Surface Water Plant Joint Stock Company (SDWTP), and Mr. Do Tat Thang, a former shareholder, to perform its contractual obligations under the share purchase agreement. Due to SDWTP could not deliver the Amended Investment Registration Certificate (amended IRC), included an amendment to increase SDWTP's project capacity, to WHAUP (SG) 2DR within the contractual period. Under the contractual obligation of the share purchase agreement, if SDWTP could not provide the amended IRC within the assigned time period, WHAUP (SG) 2DR is entitled to sell all of SDWTP shares to Aqua One and Mr. Do Tat Thang at the purchased price, plus carrying cost that incurred

from the date WHAUP (SG) 2DR paid for the shares until the date the WHAUP (SG) 2DR receives such payment amount in full.

On 19 December 2022, WHAUP (SG) 2DR received an arbitral award dated 16 December 2022, pursuant to which the arbitral tribunal rendered an award that Aqua One and Mr. Do Tat Thang shall jointly and severally purchase the shares back from WHAUP (SG) 2DR for the total amounts of VND 1,886,265,957,000 plus the accrued carrying cost during the period from the date WHAUP (SG) 2DR paid for such shares to the date the WHAUP (SG) 2DR receives such payment amount in full and reimburse WHAUP (SG) 2DR for the total arbitration fee that WHAUP (SG) 2DR has paid to VIAC together and part of the legal fees and reasonable expenses that WHAUP (SG) 2DR has incurred. The Company will take any necessary legal actions further for this matter.

5.4 SECONDARY MARKET

The Company is not listed on the stock exchange of any other country.

5.5 FINANCIAL INSTITUTION WITH REGULAR CONTACT (ONLY IN CASE OF DEBT SECURITIES OFFEROR)

Kasikornbank Public Company Limited

Bank of Ayudhya Public Company Limited

The Siam Commercial Bank Public Company Limited





CORPORATE GOVERNANCE





CORPORATE GOVERNANCE POLICY

6.1 OVERVIEW OF CORPORATE GOVERNANCE POLICY AND GUIDELINES

The Company intends to maintain high standards of corporate governance by complying with the corporate governance policy, which is subject to the Principles of Good Corporate Governance for listed companies 2012 proposed by the SET, the Principles of Good Corporate Governance for listed companies 2017 proposed by the SEC, and complying with the code of conduct which is approved by the board and communicated to everyone in the Company. The Company also set up the Standard Operating Procedures in order to control the operations and procedures of the Company. In addition, the board also approves and regularly considers having internal rules and regulations to continuously improve the Company's corporate governance.

6.1.1 CORPORATE GOVERNANCE POLICY AND GUIDELINES RELEVANT TO THE DIRECTORS

1) DIRECTOR NOMINATION

The selection process starts with the qualified individuals proposed by shareholders, directors and top executives, with all detailed biography attached. Then, the Nomination and Remuneration Committee considers the nominees' qualifications prior to proposing such persons to the Board of Directors for appointment or to seek shareholders' approval (as the case may be).

The Nomination and Remuneration Committee is responsible for selecting and determining appropriate persons with experiences, knowledge and competencies beneficial to the Company and in line with the Board Diversity and the Company's Business Strategy to be nominated as the Company's directors, independent directors or Audit Committee members and to be proposed to the Board of Directors' meeting or shareholder's meeting for appointment in accordance with the Company's Articles of Association.

2) REMUNERATION FOR DIRECTORS AND EXECUTIVE MANAGEMENT

The Nomination and Remuneration Committee has the duty to initially review the remuneration packages of directors prior to proposing to the Board of Directors for consideration and to the annual general meeting of shareholders ("AGM") for approval. The directors' and executive managements' remuneration is reviewed by considering the duties, responsibilities, related risks and performance of the directors as well as the financial status of the Company and shall be comparable with that of other companies in the same industry.

The Nomination and Remuneration Committee has the duty to review the remuneration and benefits of the CEO COO and CFO and present it to the Board of Directors for approval.

3) DIRECTOR INDEPENDENCY

In order to clearly separate out the responsibilities and duties of the Board of Directors and that of the management, the Chairman of the Board and the CEO are not the same individual. The Board of Directors provides recommendations in relation to planning, proposing strategies and providing oversight of the administration of the management, ensuring that the appropriate policies and procedures are being used in a proficient manner. Its duties also include administering the performance of the management to make sure it has due care and are honest, provides the best benefits for the Bank and stakeholders and increases the economic value of the Company and the Group companies.

The management under the supervision of the CEO has the duties and responsibilities to manage the day-to-day operations of the Company and the Group companies in accordance with the strategies approved by the Board of Directors.

The Board of Directors will not interfere in the performance of these duties. The relationship between the Board of Directors and the management is one of collaboration.

4) DEVELOPMENT OF DIRECTORS

The Company encourages its directors to participate in seminars and training courses relating to their duties so that they will continuously improve their performance. Upon taking up position as a director of the Company, each director will be briefed on important information relating to the Company's and the Group's businesses, the framework of authorities and the duties and responsibilities of the Board of Directors of the Company. The directors will receive advice on legal issues, regulations and other conditions in being a director of a listed company in the SET as well as information on the Group's businesses.

5) PERFORMANCE EVALUATION OF DIRECTORS

The Company arranges for a performance evaluation of the Board of Directors, as a whole and individually, annually. The results will be reported to the Board of Directors and used for their self-improvement. Also, the Company encourages the Board of Directors' assessment as an individual by both self-evaluation and cross-evaluation.

6) OVERSIGHT OF SUBSIDIARIES, AND ASSOCIATES COMPANIES

The Company shall authorise its directors or any other person with expertise relating to Company's business, to act as a director in subsidiaries or associates in order to control the management, as well as report to the board of directors on a quarterly basis.

The number of directors in subsidiaries and associates authorised by the Company shall be at least proportionate to the ownership of each company. Any essential policies and voting in essential agendas shall be approved by the chairman of the board.

6.1.2 CORPORATE GOVERNANCE POLICY AND GUIDELINES RELEVANT TO SHAREHOLDERS AND STAKEHOLDERS

1) RIGHTS OF SHAREHOLDERS

The Company (i) emphasizes the importance of shareholders' rights, which are not limited to the rights

under the law, (ii) refrains from any act which may infringe on, or deprive, the rights of shareholders, and (iii) encourages the shareholders to exercise their rights. Basic shareholder rights include the right to buy, sell or transfer shares, the right to share the company profit, the right to obtain adequate information from the Company, the right to attend shareholder meetings to exercise their right to vote in the appointment or removal of directors, the appointment of auditors and matters affecting the Company, such as the allocation of dividends, specifications or amendments of the Company's articles of association and memoranda of association, reduction or increase of capital and approval of extraordinary transactions.

In addition, the Company also employs the following practices in order to encourage and facilitate the exercise of shareholders' rights :

- 1) Disclosing the policies to support or encourage all shareholders to attend the Company's shareholder meetings.
- 2) Before the meeting date, the Company will send shareholders the notice of the meeting with supporting documents in advance. The notice shall contain details of the date, time, venue, criteria for meeting attendance in compliance with the law and the company's articles of association and agenda of the meeting with an explanation and reason for each of the agenda items or each resolution sought in order to provide shareholders with the opportunity to study such information, thoroughly which will be posted on the Company's website and SET system of the Stock Exchange of Thailand at least 28 days in advance and such documents are submitted to shareholders at least 21 days prior to the Meeting. In the event of emergency, the Company will notify the shareholders in advance in accordance with the time period specified by law, and will refrain from any act which will limit the opportunity of shareholders to study the Company's information.
- 3) Facilitating shareholders' participation and voting in the meeting. Any actions that could hinder shareholders from conveniently exercising their right to attend the meetings and participate in voting should be prohibited. For example, procedures to attend and vote should not be complicated or costly for shareholders, and the location of the meeting should be relatively accessible.

- 4) The chairman of the meeting will allocate proper time for the meeting and encourage shareholders to express their opinions and ask questions relating to the Company. The Company will allow shareholders to send their questions to the Company prior to the meeting date. In this regard, the criteria for advance questions will be clearly determined and the shareholders will be notified of the same in the notice of the shareholders meeting. Also, the Company will publish the criteria for submitting the questions on the Company's website.
- 5) Encouraging shareholders who cannot attend the meeting by themselves by allowing the shareholders to appoint any person or permit at least 1 independent director to attend the meeting, using proxy forms which allow shareholders to control the outcome of their votes and notify the name of such independent director in the notice of meeting.
- 6) Encouraging the use of technology in the shareholder meetings to register, count and validate votes, and depict the result of the vote for fast, accurate and prompt meetings.
- 7) Encouraging all directors, top managements and auditors of the Company to attend the shareholder meetings and answer the shareholders' questions.
- 8) In the meetings, the shareholders shall separately vote for each matter in case a particular agenda having several matters to be considered, for example, the agenda of appointment of directors.
- 9) Encouraging the appointment of an independent party to count and validate votes at shareholder meetings. The result will be disclosed at the meeting and recorded in the minutes.
- 10) Encouraging the use of voting cards for important agenda items such as related party transactions, acquisitions or disposal of assets, for the sake of transparency and traceability in the case of subsequent objection.
- 11) Disclosed the voting results and resolutions for each agenda item at the Annual General Meeting of Shareholders to the public via SET Portal and the Company's website after the Meeting ended.
- 12) Preparing minutes of shareholder meetings which include : details regarding voting procedures and the method used to find out the result of such vote; the opportunity to record both questions and answers; voting results of each agenda; and a list of attendance.

The minutes will be published on the Company's website within 14 days from the date of the meeting.

2) EQUITABLE TREATMENT OF SHAREHOLDERS

The Company has policies in place to treat all shareholders fairly and equally, regardless of their status, whether executive or non-executive shareholders, majority or minority shareholders, Thai or non-Thai shareholders. These policies are as follows :

- 1) The Company shall release its general meeting notice with detailed agenda and explanatory circulars which will be uploaded to the Company's website not less than 28 days in advance, both in Thai and English. In the event of emergency, the Company will notify the shareholders in advance in accordance with the time period specified by law prior to the date of the meeting.
- 2) The Company shall inform shareholders of meeting procedures and voting criteria, including the voting rights attached to each class of shares, if any.
- 3) The voting rights in the shareholder meetings shall be in accordance with a number of shares held by shareholders. One share will have one vote. In addition, the Company allows shareholders who attend the meeting after its commencement to vote for agendas which are under consideration and have not yet been voted upon, and the votes of such shareholders will be included in the quorum.
- 4) The Company will not table any agenda item for consideration other than those specified in the notice of meeting which have not been included in the notice to the general meeting, especially if it is an issue that will require careful consideration before deciding and the meeting shall be in accordance with the Company's Articles of Association.
- 5) The Company will allow a minority shareholder who holds shares representing at least 5% of the paid-up capital for not less than 12 months consecutively to propose in advance agenda items the annual shareholders' meeting and nominate a qualified person to serve as a director through a nomination and remuneration committee prior to the shareholder meeting date. Supporting information, with respect to candidates' qualifications and consent, should be provided by the minority shareholders nominating the candidates by post to the Company Secretary.

- 6) The process used in the election of directors should allow shareholders to vote on individual nominees. This means that the shareholders will have the opportunity to truly select the directors of their choice and preference. The Company will enclose the details of the nominated directors enough for shareholder' consideration.
- 7) The Company ensures that every director and executive regularly submits to the board a report on their ownership of the Company's shares and this information should be disclosed in the firm's annual report.
- 8) The Company shall provide written procedures to prevent the act of using inside information. The Company shall establish these procedures and communicate them to everyone in the Company. Any person deemed to have inside information is prohibited to buy and sell Company shares within one month prior to the disclosure of the quarterly and annual financial statements, and within 24 hours after publishing or disclosing material information.
- 9) The Company shall require the directors to inform the Company of their conflicts of interest regarding each agenda item before considering such agenda item, and such conflicts should be recorded in the minutes. The Company shall require such board members to abstain from participating in board discussions on agenda items for which such director has expressed a conflict of interest.

3) ROLE OF STAKEHOLDERS

(1) POLICY AND TREATMENT OF EMPLOYEES

The Company recognises the importance of all employees, whose roles are to support the Company in achieving its goals. Therefore, it is the policy of the Company to treat all employees fairly in respect of opportunity, remuneration, appointment and transfer, while striving to develop their potential. To this end, the Company undertakes the following practices :

- 1) To treat employees with politeness and respect by taking into account each employee's individualism
- 2) To give employees fair remuneration and align with short-term and long-term corporate performance, the Company considers salary adjustment for the management and employees once a year as a factor of the Key Performance Indicator (KPIs). This includes current performance (short-term) and performance based on long-term strategies to lay the foundation for future business growth. Thanks to this evaluation, the remuneration of management and employees is in line with both short-term and long-term corporate performance. Furthermore, the Company defines variable bonus payment linked to yearly performance and employee performance to motivate them to achieve annual corporate goals. Moreover, the Company also set up provident funds for employees and recognise the importance of employee' welfare, such as health and accident insurance, financial contributions towards the funeral costs of employee's parents.
- 3) To protect the work environment by adhering to health and safety regulations

Numbers of accidents at work in 2022

	Unit	Number		
		Year 2020	Year 2021	Year 2022
Number of accidents resulting in working day lost	Time	0	1	0
Number of persons injured of work	Person	0	1	0
Number of day lost	Day	0	0	0
Number of death toll	Person	0	0	0

- 4) To give extensive and constant opportunities to employees to empower them to reach their full potential
- 5) To appoint, transfer, reward and penalise the employees fairly and in good faith
- 6) To acknowledge employees' professional views and suggestions
- 7) To strictly comply with relevant laws and regulations relating to labour and employment

(2) POLICY AND TREATMENT OF SHAREHOLDERS

- 1) To perform fiduciary duty and make any decision in accordance with professional principles, with due care and fairness to both majority and minority shareholders, for the ultimate benefit of shareholders
- 2) To continually and fully present reports on the Company's status, business performance, financial status and accounting, etc.
- 3) To inform all shareholders of any plans of the Company, whether these will have a positive or negative impact, while also providing supporting information and rationale
- 4) To prohibit the use, by themselves or any third parties, of Company' information which has not yet been disclosed to the public and to avoid doing anything which may cause a conflict of interest within the Company

(3) POLICY AND TREATMENT OF CUSTOMERS

The Company recognises the importance of its customers and sets out the following policies :

- 1) To provide customers with recognised procedures relating to the production process, to focus on the consolidation and development of production technology and to regularly check the quality of products
- 2) To provide customers with recognised procedures in order to strictly and regularly comply with Company-customer regulations with good faith
- 3) To keep customer information confidential and to avoid using it for its own benefit or for the benefit of related persons
- 4) To ensure the safety of customers at all times; to commit to solving any problems which have been raised by the customers; and to take into account any customers' recommendations. The Company will, at least once a year, measure customer satisfaction relating to both products and services in order to make improvements

CUSTOMER SATISFACTION SURVEY

To evaluate customer satisfaction, WHAUP sends the customer satisfaction surveys directly to the customers through service provider team. The questionnaire assesses customers' satisfaction towards WHAUP on all aspects relating to water products and services such as; quality of supply water, water pressure, service excellence, etc. The evaluation ratings and comments are then consolidated and analyzed by the service provider team. In 2022, WHAUP received an average customer satisfaction score of 97.10 out of 100.

Year	2020	2021	2022
Customer Satisfaction Score	96	95.27	97.10
Total Number of Customers Survey	425	367	505

(4) POLICY AND TREATMENT OF PARTNERS AND/OR CREDITORS

The Company has a policy for its employees to fairly treat partners and/or creditors to avoid situations which may cause conflicts of interest. Negotiation for treatment will be conducted under the following practices :

- 1) Not to claim or receive or pay any benefits in bad faith to partners and/or creditors

- 2) In the case where there is any information that the claim, receipt or payment of any benefits was made in bad faith, details must be disclosed to partners and/or creditors and the problems should be solved fairly and promptly

- 3) To strictly comply with conditions as agreed upon. In case of non-compliance with any commitments, creditors shall be informed in advance in order to jointly come to a solution.
 - 4) The Company shall treat creditors as important partners. The Company, therefore, aims to comply with all commitments under the contracts between the Company and its creditors, including not to disclose any information which may cause damage to the creditors. In case of non-compliance with any commitments under the agreements, the Company will inform the creditors in advance to seek a solution, which might include guarantee conditions, capital management and defaults.
 - 5) The Company has a policy relating to the procurement to assort partners or contractors which will be categorised by group of distributor and contractor pursuant to the pre-determined criteria on grouping partners or contractors such as the reliable financial record, the manufacture or distribute products with required and verifiable quality and the support in promotional campaigns and provide after sales services. Such criteria shall be evaluated and considered for improvement at least once a year.
 - 6) The Company has a policy to support local business by procuring things from contractors or distributors from qualified local companies.
- 3) Not to destroy competitors' reputation by malicious accusation.
 - 4) Not to support business practices that benefit to any one of our competitors. To against the unfair competition in business operations and emphasize to abide in compliance with the Antitrust law and Comparative Competition Laws.

(6) POLICY AND TREATMENT OF SOCIETIES/ COMMUNITIES

The Company has a policy on conducting business which benefits the economy, society and adheres to the principles of good citizenship. The Company fully complies with related laws and regulations and participates in activities which promote or enhance the quality of life of societies and communities in which the Company operates its business. There are also policies in place which support participation in various organisations in societies, communities and vicinities regarding education, safety and security, etc.

(7) ENVIRONMENT POLICY

The Company shall operate its water business in a sustainable and environmentally-friendly manner in compliance with environmental management standards such as ISO14001. In addition, the Company has a policy to support various activities aimed towards quality improvements, health and safety, and the environment.

ENVIRONMENTAL AWARENESS AND TRAINING

The Company recognizes the importance of environmental preservation. The majority of the problems that affect the environment are caused by Employees who do not understand how their actions can have negative effects on the environment. For Employees whose work causes environmental concern, either directly or indirectly, environmental awareness training has been provided. The summary of the training syllabus in 2022 are below :

Training Course		Training Hour	Number of participants
1.	Water Pollution Operator	18	1
2.	Integration of Renewable Energy Sources with Energy Storage System	18	1
3.	Energy Storage Systems : Technology, Design, Control and Applications	18	2

(5) POLICY AND TREATMENT TO COMPETITORS

The Company has the policy to treat competitors without breaching the confidentiality or knowing the confidentiality of competitors with fraud and set the following policy :

- 1) To follow the rules on competition
- 2) Not to seek confidentiality of competitors by bad faith or inappropriate means.

(8) GOVERNMENT AGENCIES POLICY

The Company has defined that transactions with the Government agencies ensures strict compliance with relevant laws and regulations despite varying conditions, procedures, or practices in each locality. In addition to refusing to engage in an act that could provide an incentive for officers in government agencies to commit an inappropriate or unlawful deed.

4) CONTROL OF INTERNAL INFORMATION

The Company has issued a policy and directive forbidding the use of internal information for personal gain or others which would be taking advantage of others. The Company shall require its directors, management, and any related employees who have knowledge of material inside information which can potentially affect securities price to refrain from sale and purchase of securities of the Company during the period prior to the disclosure of financial statements or financial status of the Company until such information has been disclosed to the public, during the Blackout Period. Blackout Period means the period of one month prior to, and on the date which, the financial report of the Company has been disclosed annually and on a quarterly basis. The Company will advise in writing its directors and executives, including persons holding accounting manager or financing manager positions, or similar positions, to refrain from sale and purchase of securities of the Company. Such advice shall be sent at least 30 days in advance prior to the disclosure of information to the public and shall wait for at least 24 hours after the disclosure of information to the public. The disclosure of material information to other persons is also prohibited.

The Company shall require its directors, and all managements to prepare and submit such report on the holding of securities of such directors, managements, their spouses or cohabiting couple and minor children through the Company Secretary prior to filing with the Office of the SEC. The report shall be prepared and filed within 30 days from the appointment date of directors and executives or within three business days from the date on which securities are purchased, sold, transferred or received.

In 2022, the Corporate Secretary notified the related personnel in advance by email to be aware of the “Silent

Period”. There was no related director, executive, or employee involved in any trading of the Company’s shares during the prohibited period.

5) CONFLICT OF INTEREST

The Company requires information disclosure such as reporting transactions of potential conflicts of interest with the Company, reporting vested interests of directors and management, reporting changes in shareholding to prevent conflicts of interest and illegal, improper activities. All staff must not only avoid engaging in financial and other relationships with external parties that would lead to financial losses for the Company or a conflict of loyalty or interest, but must also not compromise the efficiency of business operations. Those staff with interests or related businesses which may require the Company’s review and decisions must report their relationships and connection with potential conflicts of interest. The Company is to disallow such connected persons from exercising their authority for and involvement in such transactions.

However, the Company may not be able to foresee all circumstances and in the event that incidents do occur, such transactions shall be conducted under general conditions with the counterparty at fair price and on an arm’s length basis without influence from a party which might have conflicting interests. In circumstances where the price cannot be determined, the Company shall refer to the report by the independent appraiser appointed by the Company in order to consider the appropriate price for both the Company and the connected person.

In 2022, the Company monitored and investigated the cases which involved conflicts of interest or potential conflicts of interest but did not find any actions that violate the conflict of interest policy.

6) DISCLOSURE AND TRANSPARENCY

The board of directors has a policy to disclose accurate, complete and transparent material information regarding the Company, both in terms of financial reports and general information, in accordance with the rules of the SEC and the SET, as well as essential information that impacts the price of the Company’s shares, which affects the decision-making process of investors and stakeholders of the Company as follows :

- 1) The Company shall disclose information to stakeholders through a mechanism which ensures that all information disclosed is accurate, will not cause any misunderstanding and is adequate for decision-making by the investors;
- 2) The board of directors shall disclose information regarding corporate governance, code of conduct, risk management policy, environmental policy and policy to societies as exclusively approved by the board, together with steps taken to implement such policies and the reason for each case of non-compliance through various channels, such as the annual report and the Company's website, etc.;
- 3) The board of directors shall present its responsibilities concerning the Company's financial reports alongside the auditor's report;
- 4) The board shall ensure that audit fee and fee for other services are disclosed;
- 5) The board shall ensure that its roles and responsibilities, together with those of its committees, the number of meetings held, the attendance record of each director, and the results of tasks assigned, including ongoing professional education or training of its directors, are disclosed in the annual report.
- 6) The board should disclose remuneration policies for directors and executives that correspond to the contributions and responsibilities of each person. Also, the board should disclose the forms and the amounts of payment to each person. If any director of the Company is also a director any of its subsidiaries, the amount paid by each subsidiary to each director should be disclosed as well.
- 7) Apart from the disclosure of information in accordance with the rules specified and through the channels of the SET, the annual registration statement (Form 56-1) and the annual report, the Company will disclose information, both in Thai and English, through other channels, such as the Company's website regularly, and present up-to-date information.
- 8) All directors and executives of the Company shall inform the Company of their interest, or the interest of a related person, with respect to the management of the business of the Company or its subsidiaries based on the rules, conditions, and procedures specified in the notification of the Capital Market Supervisory Board. Such interest must be resolved and reported to the Company within 30 days from the date on which such interest has been changed. The Company shall provide those issues in the board of director's meeting on a quarterly basis.

7) INFRINGEMENTS OF INDIVIDUAL'S RIGHTS

The Company recognizes the importance of respect for human rights, and emphasizes the equitable treatment of those within and outside of the Company. Direct or indirect infringements of an individual's rights or freedoms are prohibited. Respect for and protection of human rights are promoted in combination with measures that have been established in order to prevent the Company's business from involving the infringement of human rights, e.g. forced labour and child labour. It also stresses the fair and respectful treatment of all stakeholders on the basis of human dignity. Discrimination by origin of birth, race, gender, age, complexion, religion, physical appearance, social status or class, and genealogical history is strongly opposed. Internally, the Company promotes a mechanism for the monitoring of all employees' compliance with its rules on human rights. Externally, it encourages all joint venture parties, trading partners and stakeholders to follow the principles of preserving human rights in accordance with international standards. For any stakeholders who suffer an infringement of human rights resulting from the Company's operations, the Company offers compensation worth not lower than the rate imposed by law.

In 2022, the Company had no incidents of violation of labor laws, employment laws, consumer protection laws, and environmental laws. It should be noted that there was no case with any regulatory authorities.

8) INTELLECTUAL PROPERTY-RELATED PRACTICE

The Company has a policy of avoiding taking any action that infringes intellectual property rights, i.e. copyrights, patents, trademarks, trade secrets and other intellectual property, as defined by law. For instance, all software used by the Company is copyrighted and must be screened and installed by the IT team in order to prevent the use of pirated software.

In 2022, the Company monitored and checked for actions which could be related to infringement of intellectual property of another person, and found out that there were no infringements of another person's intellectual property or any violation of the said policy and practice guidelines on non-infringement of intellectual property, copy rights, and computer software.



9) IT SECURITY

The company has established the policy and conducted information security management that complies with ISO/IEC 27001 : 2013 and the cybersecurity framework developed by the National Institute of Standards and Technology of the United States of America (National Institute of Standards and Technology : NIST) and approved by the management. It is promulgated and implemented throughout the organization to be effective for personnel at all levels of the organization from executives, employees, as well as third parties involved in the use of information and assets, information of the organization.

As well as the Company has complied with and focused on the Cyber Security Act of Thailand B.E. 2562 (2019), Personal Data Protection Act. ("PDPA") and the revised version or other applicable laws/regulations in Thailand.

In 2022, the Company has organized the training on the topic of "Cybersecurity Awareness Training" to continuously improve the security standards of the organization's information technology in response to changing circumstances as well as PDPA Training for employees throughout the organization.

หลักสูตรภาคบังคับสำหรับพนักงาน WHA ทุกคน

CYBERSECURITY

การป้องกันภัยทางไซเบอร์ SEASON II

การรักษาความมั่นคงปลอดภัยทางไซเบอร์เป็นหน้าที่ของทุกคน

ความรู้ทั่วไปเกี่ยวกับ CYBERSECURITY

- ชีวิตของเราต้องพึ่งพาอินเทอร์เน็ตมากแค่ไหน ?
- ทำไม CYBERSECURITY ถึงสำคัญ ?
- 10 อันดับเทคนิคการโจมตีในรูปแบบ PASSWORD CRACKING ที่แฮกเกอร์นิยมใช้
- 5 เคล็ดลับความปลอดภัยทางไซเบอร์ (CYBERSECURITY TIPS)

CYBERSECURITY กับชีวิตประจำวัน และ การนำมาปรับใช้ในองค์กร

- 3 ทักษะที่องค์กรต้องเจอได้ในชีวิตประจำวันของคุณ!!!
- ป้องกันภัย CALL CENTER มหากาฬ รู้ทันมิจฉาชีพ
- อัปเดตข่าวสารเกี่ยวกับภัยทาง CYBERSECURITY

เปิดอบรม 4 รุ่น

ผ่าน MS Teams

รุ่นที่ 1 วันพฤหัสบดีที่ 23 มิถุนายน 2565 เวลา 9:30 - 12:00 น. [Click](#)

หลักสูตรภาคบังคับสำหรับพนักงาน WHA ทุกคน

เปิดอบรมหลักสูตรการคุ้มครองข้อมูลส่วนบุคคล

Personal Data Protection Act (PDPA)

เพราะการคุ้มครองข้อมูลส่วนบุคคลเป็นเรื่องของทุกคนชาว WHA

หลักสูตรนี้จัดทำขึ้นเพื่อเตรียมความพร้อม และ สร้างความเข้าใจเกี่ยวกับการคุ้มครองข้อมูลส่วนบุคคล ตามพระราชบัญญัติคุ้มครองข้อมูลส่วนบุคคล 2562 (Personal Data Protection Act) หรือ PDPA ที่มีผลบังคับใช้ในวันที่ 1 มิถุนายน 2565 นี้

เปิดอบรม 4 รุ่น

ผ่าน Microsoft Teams

เนื้อหาหลักสูตร

- PDPA คืออะไร
- บทบาทหน้าที่และความรับผิดชอบตามกฎหมาย
- คู่มือปฏิบัติงานภายในองค์กร

10) ANTI-CORRUPTION

The Company intends and is committed to taking a stand against corruption in any form by adhering to the Anti-corruption Policy and the regulations according to the laws on anti-corruption. The Company communicates the Anti-corruption Policy and regulations with employees and regularly arranges training courses for directors, management, and employees. The Company arranges for reporting channels for complaints and whistleblowing on any suspected corruption or improper behavior of employees of the Company. The Company also sets the whistleblower protection process and realizes the importance of keeping reported information and evidences confidential.

The Company has announced its intention to be part of the Thai Private Sector Collective Action Against Corruption/ CAC which obtains support from the government and the National Anti-Corruption Commission. The Company has been certified as a full member of the CAC since 2019 and was extended as a member in 2022 for the duration of three years after the date of certification.

The Company continuously monitors and evaluates the implementation of its anti-corruption policy and measures, by assigning the Corporate Secretary to oversee and monitor the compliance of such policy and measures and report the outcome of such compliance to the Audit Committee for a further report to the Board of Directors. In the past year, it was found that there is no incidents of fraud or corruption inside or outside the organization.

6.2 CODE OF CONDUCT

The Company strongly believes that conducting business with ethical standards is essential for sustainable growth for the benefit of all stakeholders. In order to encourage and support good business ethics, the Company has set out relevant guidelines which have been approved by the board, and require the board, executive directors and employees to strictly comply with and communicate them to everyone in the Company through various channels, including via email, and the intranet system to encourage everyone to comply with the Company's code of conduct. The code of conduct has been prepared pursuant to good faith, transparency and the corporate governance policy,

as well as good ethical standards which will be followed up, and such policy and its compliance will be reviewed annually.

In 2022, the Company made its Code of Conduct known to its directors, executive, and employees, and ensures that each of its employees is aware of this Code of Conduct from their first day of work. The Code is always prescribed as an agenda topic in the orientation of new directors, executives, and employees, and it is a requirement that each employee must abide by and comply with this Code.

Details and guidelines for the Code of Conduct can be found in the Code of Conduct handbook, which the company has posted on the Company's website.

6.3 HIGHLIGHTS OF CHANGES AND DEVELOPMENT OF CORPORATE GOVERNANCE POLICIES, GUIDELINES, AND SYSTEM

6.3.1 HIGHLIGHTS OF CHANGES AND DEVELOPMENT OF THE REVIEW OF CORPORATE GOVERNANCE POLICIES, GUIDELINES, AND SYSTEM, OR THE DIRECTORS' CHARTERS IN 2022

- 1) The Company determined and reviewed policies and guidelines in 2022 as follows :
 - Corporate Governance Policy and Code of Conduct as well as Anti-Corruption Policy,
 - Risk Management Policy for suitability with the Company's corporate risk management objectives and strategies,
 - Guidelines on the Oversight of subsidiaries, and associates companies,
 - Dissemination of the revised CG Policy, and Code of Conduct. The improvement of such policies were in line with SEC Principles of Good Corporate Governance for Listed Companies 2017 (CG Code), and in line with the guidelines of WHA Group, the topic, and contents of which were updated.

- 2) Encouragement of the employees to comply with the guidelines of Corporate Governance
 - Reports of conflicts of interest by directors, management, and employees
 - Employees signed their names acknowledging the CG & Anti-Corruption Policy
 - Communication and creation of understandings among all related parties such as directors, executives, and employees to be aware of the policy and practice guidelines on the preventing misuse of internal information, and conflict of interest
- 3) Supported compliance with CG principles of directors and management
 - Orientation of new directors and director training
 - Non-executive Directors' meeting
 - Prevention of using inside information (directors and management were reminded of the Black-Out Period, during which the disclosure of important information might impact the Company's stock prices before the information reached the general public)
 - Review of the charters of the Board and the Subcommittees in 2022
 - Self-assessment and cross-assessment of the Board of Directors
- 4) Awareness raised of the public and treatment of rights of stakeholders
 - Treatment of rights of stakeholders (minor shareholders), e.g., AGM was held following good corporate governance principles and Shareholders were invited to propose agenda items and nominate director candidates in the AGM
 - Awareness raised of the public through information disclosure by preparation of the information disclosure on the Company's CG Compliance and Internal Control in the Company's Annual Report, Form 56-1, and Sustainability Report

6.3.2 IMPLEMENTATION OF CORPORATE GOVERNANCE CODE FOR LISTED COMPANIES 2017 ("CG CODE") RELEASED BY THE SEC

The Board of Directors formulated the CG Policy in written form in 2016, and the most updated version was

issued in 2022. All Directors, executives and employees are responsible for acknowledging and abiding by this policy. The Company disseminated this policy, principles and guidelines via the Company's website at www.wha-up.com, which allows the interested public to study and download the information. In 2022, The Company regularly studied and reviewed rules, notices and guidelines on good corporate governance.

This year, the Board of Directors appropriately applied with all elements (8 principles and 37 sub-principles) of practice guidelines outlined in the Corporate Governance Code for Listed Companies 2017 (the CG Code) developed by the Securities and Exchange Commission (SEC) with the context of its business but did not cover the criteria under the Corporate Governance Report of Thai Listed Companies, e.g., **1) the Chairman of the board should be an independent director**, although the Chairman of the Board is not an independent director, there is a balance of power between the board and management that the Chairman of the Board and the Chief Executive Officer are not the same person and clearly define the roles and responsibilities of both positions. In addition, the Board of Directors appointed an independent director as Lead Independent Director to jointly consider setting out the agenda of the Board of Directors' Meetings. **2) Term limit of nine years or less for independent directors**, where the Company still has the exception of the term of office of independent directors for a period of no more than 9 consecutive years except pursuant to the approval of shareholders due to there were not many independent directors with knowledge of the Company's business. The existing independent directors are composed of four members, and all of them have had work experience with their knowledge, competence, and skill that will be useful for the Company's business operation. **3) Cumulative Voting**, according to the Company's Regulation, states one share carries one vote, and each shareholder may choose to exercise all of his or her votes for one or more Directors, but may not divide his or her votes for any preferred candidate.

6.3.3 OTHER IMPLEMENTATION UNDER CG CODE

In this year, the Company pays great attention and commits to conduct its business according to good corporate governance principles and implements under CG Code as follows :

- Provided an opportunity for shareholders to propose agenda and to nominate Director candidates. The details and procedures are placed on the Company's website and SET's SCP system from 1 October 2021 - 31 December 2021.
- The Company submitted news releases to SET's SCP system. On 23 February 2022, a resolution was passed by the Board to set the AGM 2022 date. The Company published the AGM invitation notice 2022 via the Company's website in both Thai and English for at least 30 days prior to the date of the AGM (18 March 2022) and distribute the AGM invitation notice along with its annual report and in the Barcode format to shareholders no less than 21 days prior to the meeting (31 March 2022). The Company also announced the date of the AGM in newspapers for three consecutive days and at least three days prior to the AGM for the shareholders to prepare themselves for the meeting.
- For institutional investors, the Company facilitated the AGM registration process. The Company has contacted institutional investors to coordinate on preparation of proxy forms prior to the date of the meeting.
- The Company held the AGM 2022 on 22 April 2022 via Electronic Medis (E-Meeting)
- The Company disclosed the resolutions of the AGM along with the vote results on the same day after the meeting by notifying SET in the form of a newsletter through SET's SCP system and the Company also prepared the minutes of the shareholder's meeting and notified SET within 14 days after the meeting (5 May 2022) through SET's SCP system and on the Company's website.
- The Board offers opportunities for the public to file complaints about the improper behavior of directors, the management, and staff or their violation of the Company's code of conduct. The Company treats all complaints on the basis of equality, transparency, attention, and fairness to all concerned. An appropriate timeframe to consider the complaints is set, and secrecy and protection of whistleblowers will be observed. In 2022, the Company did not receive any complaints.

In 2022, the Company was rated on corporate governance practice and sustainability as follows :



- Rated "Excellent" in the Corporate Governance Report of Thai Listed Companies (CGR) 2022 for the fourth consecutive year, carried out by the Thai Institute of Directors Association (IOD).



- Listed in Thailand Sustainability Investment (THSI) for the third consecutive year from the Stock Exchange of Thailand



- Scoring 100 points in the evaluation of the quality of Annual General Meeting of Shareholders for the year 2022 (AGM Checklist) of listed companies for the fifth consecutive year by the Thai Investors Association.



- Recognized as a certified company by Thailand's Private Sector Collective Action against Corruption (CAC). It was first certified on 4 November 2019 and recertified most recently on 31 December 2022.



CORPORATE GOVERNANCE STRUCTURE AND KEY INFORMATION ABOUT THE BOARD OF DIRECTORS, SUBCOMMITTEES, MANAGEMENT, EMPLOYEES, AND OTHERS

7.1 STRUCTURE OF CORPORATE GOVERNANCE

As of 31 December 2022, the Corporate Governance Structure of the Company consists of the Board of Directors and five sub-committees, i.e. the Audit Committee, Executive Committee, Risk Management Committee, Corporate Governance and Sustainable Development Committee, and Nomination and Remuneration Committee. The Management Structure of the Company is as follow :



Note : For the functions under the corporation service e.g., Legal, Procurement, IT and HR the Company uses outsource service

7.2 BOARD OF DIRECTORS

7.2.1 COMPOSITION OF THE BOARD OF DIRECTORS

- The Board of Directors has responsibilities to the shareholders on business undertaking, consisting of at least five directors and at least half of all directors shall reside in Thailand.
- The Board of Directors comprises of executive director and non-executive director in which the members of audit committee include of non-executive director.
- The Board of Directors shall appoint one of the directors to be the Chairman of the Board of Directors. If the Board of Directors deem it appropriate, the Board of Directors may appoint one or more directors to be a Vice-Chairman of the Board of Directors.
- Not less than one-third of board members shall be independent directors, at least three independent directors in any case.
- In the case that the Chairman of the Board of Directors is not an independent director, the Board of Directors will promote a checks and balances system between the Board of Directors and the Management by ensuring that an independent director is appointed to jointly consider setting out the agenda of the Board of Directors' Meetings, whom may be appointed as Lead Independent Director.

As of 31 December 2022, the Company's Board of Directors consisted of 10 directors of which there are two women directors or 20% of the total board members. In terms of age, one director is aged between 41 - 50 years old, three directors are aged between 51 - 60 years old and six directors are aged between 61 - 70 years old.

In which 9 of whom were non-executive directors or 90% of the total board members, four are independent directors or 40% of the total board members, and one executive director, namely the Chief Executive Officer.

The Chairman of the Board of Directors is not the same person as the Chief Executive Officer to clear-cut responsibilities and duties. Although the Chairman of the Board of Directors is not an independent director, the Company promotes a checks and balances system between the Board of Directors and the Management by ensuring that an independent director is appointed to jointly consider setting out the agenda of the Board of Directors Meetings, whom may be appointed as Lead Independent Director.



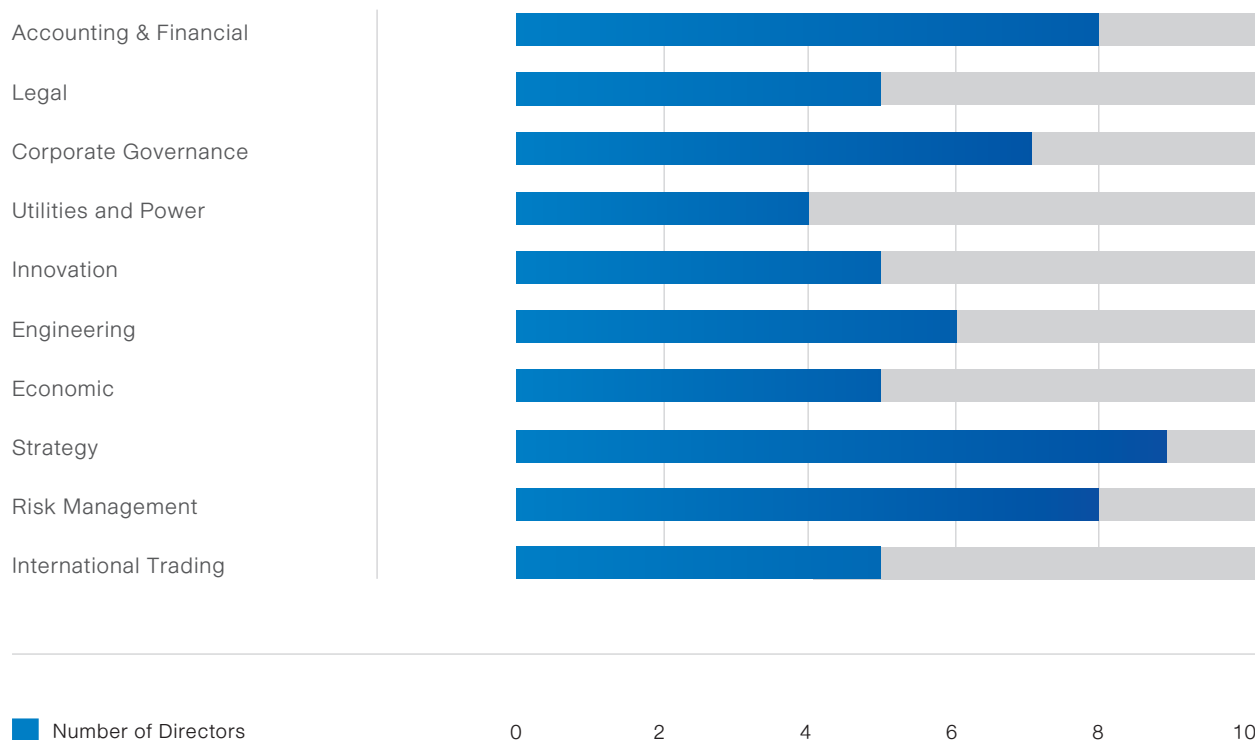


The Board of Directors will ensure that its members comprises directors with various qualifications in line with the Board Diversity Policy in terms of professional skills, experience, competency, characteristics, specific expertise, gender, age, nationality, citizenship as necessary to achieve the organization's objectives and main goals (detailed in Attachment 1). In this connection, a Board Skill Matrix will be established to make sure that the overall Board of Directors possesses suitable

qualifications, is capable of understanding and responding to the stakeholders' requirements, and includes at least one non-executive director with experience in the core business or industry in which the Company currently operates.

The Board Skill Matrix as of 31 December 2022 is as follows :

EDUCATIONS AND EXPERIENCES



7.2.2 THE BOARD OF DIRECTORS INFORMATION AND THE AUTHORIZED DIRECTOR

As of 31 December 2022, the Board comprised 10 directors as follows.

Name	Position	Appointment Date
1. Ms. Jareeporn Jarukornsakul (Non-executive director)	Chairman of the Board of Directors Chairman of the Executive Committee Chairman of the Risk Management Committee Nomination and Remuneration Committee Member	25 March 2015 (Chairman since 9 February 2018)
2. Mr. Weidt Nuchjalearn (Non-executive director)	Independent Director Chairman of the Audit Committee Chairman of the Nomination and Remuneration Committee Lead Independent Director	2 December 2015
3. Mr. Ekajai Tivutanond (Non-executive director)	Independent Director Audit Committee Member Corporate Governance and Sustainable Development Committee Member Nomination and Remuneration Committee Member	2 December 2015
4. Mrs. Punnee Worawuthichongsathit (Non-executive director)	Independent Director Audit Committee Member Chairman of the Corporate Governance and Sustainable Development Committee Member	2 December 2015
5. Mr. Numchai Lowattanatakul (Non-executive director)	Independent Director Risk Management Committee Member	20 April 2021
6. Mr. David Richard Nardone (Non-executive director)	Director Executive Committee Member Risk Management Committee Member	30 June 2008
7. Mr. Vivat Jiratikarnsakul (Non-executive director)	Director Executive Committee Member Corporate Governance and Sustainable Development Committee Member	25 March 2015
8. Mr. Somkiat Masunthasuwun (Executive director)	Director Executive Committee Member Chief Executive Officer	23 April 2022 23 April 2022 1 May 2022
9. Mr. Pajongwit Pongsivapai (Non-executive director)	Director Executive Committee Member	22 April 2022
10. Mr. Krailuck Asawachatroj (Non-executive director)	Director	20 April 2021

AUTHORIZED DIRECTORS

As of 31 December 2022, the directors authorized to act on behalf of the Company as stated in affidavit of the Company are Ms. Jareeporn Jarukornsakul signs jointly with Mr. David Richard Nardone or Mr. Vivat Jiratikarnsakul or Mr. Somkiat Masunthasuwun, making a total of two (2) persons, together with the Company's seal affixed.

TERM OF OFFICE

1. In an annual general meeting of the Company, one third of directors must resign from office. If the number of directors is not a multiple of three, then the number nearest to one third must resign from office. Those who have the longest term must resign first. A retiring director is eligible for re-appointment.

2. If there is a vacant seat, except for in cases of retirement by rotation, the Nomination and Remuneration committee shall elect the persons who possess the required qualifications, but do not possess any prohibited characteristics under the law governing public limited companies and the law governing securities and exchange, for nomination at the next board of directors' meeting, unless the remaining term of office of the vacating director is less than two months. If such vacancy occurs, any appointed persons shall retain office during the time only as the vacating director was entitled to retain the same. In this regard, the resolution of the board of directors shall not less than three-fourths of the number of remaining directors.

3. In case of vacancies of all members in the Board of Directors, the said Board of Directors may perform any act in the name of the Board of Directors only in matters necessary until a new Board of Directors takes over.

INDEPENDENCE OF DIRECTORS

The Company's Board of Directors comprises of at least five directors in line with the Article of Association of the Company, which consisting of at least one third of independent directors out of total directors, and at least 3 persons and the Company has at least three audit committee members in line with the Capital Market Supervisory Board and SEC regulations.

The Company viewed that the board structure is transparent, sufficient and able to protect the shareholders' and the Company's benefit. All of the Company's independent directors are independent of management and majority shareholders and each of independent directors is external persons having knowledge, capability and experience which benefit to the operation of the Company and no conflict of interest involves with the major shareholders. These independent directors attend and give opinion in the meetings regularly.

In addition, once the Company becomes a listed company on the SET, the Company shall comply with the notifications of the SEC, the Capital Market Supervisory Board, the SET's board, such as the notifications relating to connected transaction and the acquisition or disposition of assets. Under these notifications, any material transaction must be approved by the shareholders' meeting and the Company must inform shareholders the opinion of the audit committee. The audit committee is viewed as a representative of minority shareholders. Therefore, if the shareholders received the opinion of the audit committee, the shareholders will have sufficient information for their decision making.

The directors have duties to comply with the applicable laws, e.g. fiduciary duty according to the Securities and Exchange Act, the Public Company Act and the Company's policies including corporate governance policy, code of conduct which require directors and related persons to comply with applicable laws and policies for the utmost benefit of the shareholders of the Company.

7.2.3 DETAIL OF DUTIES AND RESPONSIBILITIES OF THE BOARD OF DIRECTORS

The Board performs crucial roles in determining and reviewing the Company's vision, missions, business strategies, operations plans, and budget including establishing the materiality assessment process. It must adapt to a quickly evolving business environment. The Board must approve important aspects of the Company and Subsidiaries' operations at least once a year. The Board reviewed and approved the Company's vision, missions, and business strategies annually in order to allow the Board along with top executives jointly reviewed vision, missions, and short-term and long-term business strategies against business directions and future trends and perform other duties which specifies in the Board of Directors Charter and such charter will be reviewed at least once a year.

DUTIES AND RESPONSIBILITIES OF THE BOARD OF DIRECTORS

1. To perform their duties and responsibilities of managing and operating the business of the Company in compliance with laws, rules, regulations or notification of the Securities and Exchange Commission of Thailand, the Capital Market Supervisory Board, and the Stock Exchange of Thailand that relate to the Company's objectives, the Articles of Association, the resolutions of the Board of Directors and the resolutions of the shareholders' meeting with their accountabilities, carefulness, and integrity;
2. To set up the vision, strategy, direction, policies, goals, plans, budgets, management structure and authorization of the Company and subsidiaries, which are presented by the administration of the Company, and will supervise the performance of management, committees or any other persons assigned by the Company to ensure compliance with the policies for the best interests of the Company and its shareholders;
3. To monitor the Executive and operation of the Executive Committee, Chief Executive Officer, the Executive, or any persons who take responsibilities and such duties in accordance with the Company's policies determined by the Board of Directors;

4. To constantly follow up the Company's performance to be in compliance with the operating plan and budget of the Company;
5. To ensure that the Company and the subsidiaries implement an appropriate and efficient accounting system, financial reporting and account auditing, and provide a traceable internal control system and internal audit system;
6. To prepare policy in relation to good corporate governance principle in writing and efficiently apply such policy to ensure that the Company be fairly responsible to all relevant group of persons;
7. To approve the appointment of person who has qualification and is not prohibited under the Public Limited Company Act, B.E. 2535 (as amended), the Securities Exchange Act, B.E.2535 (as amended), including other relevant notifications, regulations and/or rules to substitute a vacancy in the Board of Directors for reasons other than the termination of the term of office;
8. To appoint the sub-committee such as the Audit Committee, the Executive Committee, the Corporate Governance and Sustainable Development Committee, the Remuneration and Nomination Committee, the Risk Management Committee, or other committee, including determining their duties and authorities in order to support the Board of Directors' management;
9. To appoint the Top Executive, including determining their remuneration;
10. To approve the loan to such companies that have a business relationship with the Company as shareholders, or companies relating to commercial business or other companies in the amount that exceeds the Executive Committee's authority;
11. To approve the investment and divestment of common shares and/or other securities in amount that exceeds the Executive Committee's authority;
12. To consider an interim dividend payment for Company shareholders;
13. To establish and monitor efficient Anti-Corruption system, ensure the executive team awareness and attention to the Anti-Corruption scheme, embed organizational Anti-Corruption culture and the board of directors will comply with the Anti-Corruption measures and punish when non-compliance occurs;

14. To appoint the Company Secretary to support the directors to perform their duties in accordance with related laws and regulations.

DUTIES AND RESPONSIBILITIES OF CHAIRMAN OF BOARD OF DIRECTORS

1. The Chairman is responsible as the Board's leader and as the Chairman of Board's meeting as well as in shareholders' meeting;
2. In case of equality of vote, the Chairman shall have a casting vote in the Board meeting.
3. To consider for the nominating and screening of appropriate persons to be appointed as the director and/or executive of the Company's subsidiaries and joint ventures and then report to the Nomination and Remuneration Committee or the Board of Directors.
4. To engage the directors in the promotion and creation of an ethical corporate culture and good corporate governance;
5. To set out the agenda of the Board of Directors' Meetings in consultation with the Chief Executive Officer, and take measures to incorporate significant matters in the agenda;
6. To allocate sufficient time for the Management to propose matters and for directors to thoroughly discuss significant issues, and promote directors to carefully exercise their discretion and independently express their opinions;
7. To promote good relationships between executive directors and non-executive directors, and between the Board of Directors and the Management.

7.3 THE SUB-COMMITTEES INFORMATION

7.3.1 SUB-COMMITTEES

The board of directors are organised into five committees, namely the Executive committee, Audit committee, Nomination and Remuneration committee, Risk Management committee and Corporate Governance committee to review and monitor the operations at the Company based on the specified scope of duties in order to enhance their efficiency. The composition, qualification, appointment, term of office, meeting and remuneration of each committee shall be in accordance with the qualifications listed in the respective Sub-Committee's Charters, which will be reviewed at least once a year.

7.3.2 LIST OF SUB-COMMITTEES

(1) EXECUTIVE COMMITTEE

As of 31 December 2022, the Executive Committee comprised eight members as follows.

Name - Surname		Position
1.	Ms. Jareeporn Jarukornsakul	Chairman
2.	Mr. David Richard Nardone	Member
3.	Mr. Vivat Jiratikarnsakul	Member
4.	Mr. Somkiat Masunthasuwun	Member
5.	Mr. Pajongwit Pongsivapai	Member
6.	Mr. Natthapatt Tanboon-ek	Member
7.	Mr. Akarin Prathuangsit	Member
8.	Mr. Prapon Chinudomsub	Member

Ms. Nutchra Rattanjitbanjong acts as the secretary of the Executive Committee.

DUTIES AND RESPONSIBILITIES OF THE EXECUTIVE COMMITTEE

1. To consider and prepare policies, strategies, goals and business plans, financial targets and annual budget of the Company which are appropriately considered and should be proposed to the board of directors. If situations have changed, the Executive committee shall consider the approved budget appropriately.
2. To consider, screen and monitor the Company's operation to comply with the policy, business strategy, goals, business plans, financial targets and budgets approved by the board of directors for efficiency and effectiveness, and to provide management with advice and recommendations about top executives.
3. To determine the structure of the Company and management policy, and appointment and transfer of the executives of each business, and to consider and monitor the succession plans, manpower plans, remuneration plans and evaluation of performance of the directors.
4. To study the possibility of investment in new projects. The Executive committee has the authority to consider and approve the investment or joint investment with natural persons, juristic persons, or any other business organisations to operate the Company's business as the Executive committee deems appropriate, as well as to consider and approve any payment for such investments, and to enter into any agreements and/or any processes relating to such matters pursuant to financial limits in the Company's Internal Power of Authority (IPOA) and/or related laws and regulations and/or the Company's articles of association.
5. To monitor the performance and development of invested project in each business and to notify the board of directors of the results, including problems or obstacles and how to solve these issues.
6. To consider and give recommendation or opinion to the board of directors relating to the proposed project or the entering into of any transactions in the Company's course of business as well as to consider alternative fundraising methods when it is necessary and in excess of the specified financial limit in the Company's Internal Power of Authority (IPOA). Related laws and regulations and the Company's articles of association require shareholders meetings or board of directors' meetings to approve such issues.

7. To consider and enter into any financial transactions with financial institutions for opening accounts, borrowing money, applying for credit, a pledge, mortgage and a guarantee, among others, including sale and purchase, and register any ownership on the site under the Company's objective for the operation of the Company, as well as to enter into any agreement, apply for, propose, contact with, or conduct any juristic act with the governmental authority in order to obtain any rights of the Company and/or proceed with any operation regarding such issues pursuant to the financial limit in the Company's Internal Power of Authority (IPOA) and/or related laws and regulations or the Company's articles of association.
8. To consider and approve rules, articles of association, management policy and any operation of the Company's business or any act binding the Company.
9. To appoint and/or assign the member of the Executive committee or one or more persons to act on behalf of and within the scope of authority of the Executive committee as the Executive committee deems appropriate. The Executive committee may cancel, revoke, or change such authority.
10. To have the duties and responsibilities which have been assigned, or are pursuant to the policy assigned by the board of directors.
11. To consider and approve the guidelines for appointed and/or authorised persons to acknowledge their scope of responsibility and authority and to use such guidelines as the operation handbook with referable evidence and under orderly procedures.

(2) AUDIT COMMITTEE

As of 31 December 2022, the Audit Committee comprised three members as follows.

Name - Surname		Position
1.	Mr. Weidt Nuchjalearn	Chairman (Independent Director)
2.	Mr. Ekajai Tivutanond	Member (Independent Director)
3.	Mrs. Punnee Worawuthichongsathit	Member (Independent Director)

Mr. Weidt Nuchjalearn and Mrs. Punnee Worawuthichongsathit are directors having sufficient knowledge and experience in accounting or finance to review the reliability of the financial statements, and Ms. Phatrasasi Bubpadee acts as secretary for the Audit Committee.

DUTIES AND RESPONSIBILITIES OF THE AUDIT COMMITTEE

1. To ensure that the Company's financial statements are accurate and adequately disclosed;
2. To ensure that the Company implements internal controls and internal audit systems that are appropriate and effective. In case of necessity, the Audit Committee shall hire specialists for suggestion assembled in consideration, the company is responsible for the costs incurred, including the overall performance evaluation and the independence of the internal audit unit, while giving consent regarding appointment, transfer, and termination of employment of the head of the internal audit or any other unit responsible for internal audit, and participate in the meeting with head of the internal audit or other unit responsible for internal audit without the Management at least 1 time per year;
3. To ensure that the Company complies with the law governing securities and exchange, regulations of the SET, and the laws applicable to the Company's business;
4. To consider selecting, nominating, and appointing an independent person to act as an auditor of the Company including to propose the remuneration and termination of such auditor, and attend meetings with the auditor without the management's presence at least once a year;
5. To consider related party transactions or transactions with likely conflicts of interest and ensure that they are conducted in accordance with the law and regulations of the SET and ensure that such transactions are reasonable and in the best interest of the Company;

6. To prepare a report relating to the performance of the Audit committee disclosed in the Company's annual report. Such report must be signed by the chairman of the Audit committee and shall contain the following information :
 - The opinion on the accuracy, completeness, and reliability of the Company's financial reports
 - The opinion on the sufficiency of the internal control of the Company
 - The opinion on compliance with the SEC's laws and regulations of the SET, or other laws relating to the Company's business
 - The opinion on the appropriateness of the auditor
 - The opinion on the transactions that may give rise to conflicts of interest
 - The amount of Audit committee' meetings and the attendance list of each Audit committee
 - The overall opinion or remark that the Audit committee obtained from performing its duties according to the charter
 - Other transactions about which shareholders and general investors should be informed under the scope of duties and responsibilities assigned by the board of directors
7. To perform any other acts assigned by the board of directors, with the consent of the Audit committee.
8. In performing the Audit committee's duties, if a transaction or action which may materially affect the Company's financial status and performance is found or suspected to occur, the Audit committee shall report to the board of directors of the Company in order to remedy such affect within a period that the Audit committee deems appropriate. Such transaction or action is as follows :
 - (a) A transaction having a conflict of interest
 - (b) A fraud or irregularity or major defect on the internal control system
 - (c) Violation of the law governing securities and exchange, regulations of the SET, and the laws applicable to the Company's business

If the board of directors or the executives do not remedy within the period set out in paragraph one, any of the Audit committee members may report that there are such transactions or actions under the first paragraph to the SEC or SET.

9. To get whistle blowing from employees regarding unappropriated transaction on financial statements including other corruption issues, there are an independent investigation process and an appropriate follow-up action
10. To consider and propose to amend the scope of duty, authority and responsibility of the Audit committee as it deems appropriate.
11. To consider the regulations and an annual performance review at least once a year.

The Audit Committee is responsible to the Board of Directors and the Baord of Diretors is still responsible the Company's operation to other persons.

The Committee's job is one of oversight. Management is responsible for the preparation of the Company's financial statements and the independent auditors are responsible for auditing these financial statements. The Committee and the Board regonize that management including the internal audit staff and the independent directors have more resources and time and more detailed knowledge and information regarding the Company's accounting, auditing, internal control and financial reporting practices than the Committee, the Committee's oversight role does not provide any expert or special assurance as to the financial statements and other financial information provided by the Company to its shareholders and others.

The Board of Directors is empowered to make amendment and change definitions and qualifications of the independent director as well as scope of duties and responsibilities of the Audit Committee according to the regulations of the Security and Exchange Commission, the Stock Exchange of Thailand, The Capital Market Supervisory Board, and other related laws.

(3) NOMINATION AND REMUNERATION COMMITTEE

As of 31 December 2022, the Nomination and Remuneration Committee comprised three members as follows.

	Name - Surname	Position
1.	Mr. Weidt Nuchjalearn	Chairman (Independent Director)
2.	Ms. Jareeporn Jarukornsakul	Member
3.	Mr. Ekajai Tivutanond	Member (Independent Director)

Ms. Nutchra Rattanajitbanjong acts as the secretary of the Nomination and Remuneration Committee.

DUTIES AND RESPONSIBILITIES OF THE NOMINATION AND REMUNERATION COMMITTEE

1. To consider the structure, composition and qualification of the board of directors and other groups of committees of the Company.
2. To consider the rules and procedures for the nomination of directors. To nominate appropriate persons to serve as directors and propose to the board, for consideration by the shareholders meeting, in cases when directors retire by rotation, and propose to the board of directors in other cases. To give opportunity to the minority shareholders, with a sufficient period of time, to compile a list of persons to be nominated as directors prior to the shareholder meeting.
3. To consider and suggest the list of Company directors or any person to serve in the committees of the Company.
4. To consider screening appropriate persons to be a Chief Executive Officer if there is a vacant seat.
5. To approve the succession plan for the Chief Executive Officer and Top Management by constant review.
6. To assess the rules relating to the evaluation of the performance of the Chief Executive Officer and present the results to the Board of Directors for consideration.
7. To evaluate the performance of the Chief Executive Officer in order to consider the appropriateness or remuneration and present the results to the Board of Directors for consideration.
8. To access the rules on the remuneration for the Board of Directors, the Sub-committees, Chief Executive Officer and Top Management of the Company including attendance fees, annual bonus, welfare and other benefits and to present the results to the Board of Directors for consideration.
9. To consider the rule on the bonus for employees
10. In addition, the duties and responsibilities of the Nomination and Remuneration Committee shall be covered to its subsidiary in which it holds more than 50% of Company's voting shares.

(4) CORPORATE GOVERNANCE AND SUSTAINABLE DEVELOPMENT COMMITTEE

As of 31 December 2022, the Corporate Governance and Sustainable Development Committee comprised three members as follows.

	Name - Surname	Position
1.	Mrs. Punnee Worawuthichongsathit	Chairman (Independent Director)
2.	Mr. Ekajai Tivutanond	Member (Independent Director)
3.	Mr. Vivat Jiratikarnsakul	Member

Ms. Nutchra Rattanajitbanjong acts as the secretary of the Corporate Governance and Sustainable Development Committee.

DUTIES AND RESPONSIBILITIES OF THE CORPORATE GOVERNANCE AND SUSTAINABLE DEVELOPMENT COMMITTEE

1. To consider, review and revise the corporate governance policy and drive of sustainability policy in order to propose to the board of directors for approval. The policy will be made in writing and used as best practice.
2. To consider, review and revise the code of conduct. The code of conduct will be made in writing and used as best practice.
3. To consider, review and revise the policy on Corporate Social Responsibilities.
4. To consider, review and revise the Anti-Corruption Policy. Provide suggestions on performance review and assessment related to the Anti-Corruption Policy. The Anti-Corruption Policy will be in writing and used as best practice.
5. To monitor, review and improve the performance to be in accordance with the designated plan and to prepare summary reports for the board of directors.
6. In addition, the duties and responsibilities of the Corporate Governance and Sustainable Development Committee shall be covered to its subsidiary in which it holds more than 50% of Company's voting shares.

(5) RISK MANAGEMENT COMMITTEE

As of 31 December 2022, the Risk Management Committee comprised three members as follows.

Name - Surname		Position
1.	Ms. Jareeporn Jarukornsakul	Chairman
2.	Mr. David Richard Nardon	Member
3.	Mr. Numchai Lowattanatakul	Member (Independent Director)

Ms. Nucha Rattanajitbanjong acts as the secretary of the Risk Management Committee.

DUTIES AND RESPONSIBILITIES OF RISK MANAGEMENT COMMITTEE

1. To approve risk management policy, scope of risk management and acceptable risk level of the Company assigned by the board of directors.
2. To monitor and support the compliance of the risk management policy to be in line with strategy, operational targets, anti-corruption policy and altered situations.
3. To monitor the compliance of the risk management policy and the scope of risk management for an efficient risk management system and continuous compliance throughout the Company.
4. To consider the report from the risk management team to monitor the material risks at the organisation level as well as to provide opinions on the risks which may have occurred and control measures, practices or risk management plans in order to ensure sufficient and appropriate risk management of the Company.
5. To report to the board of director's potential risks and risk management plans. If there are important factors which may materially affect the Company, they must be reported to the board of the Company, immediately.

6. To coordinate with the Audit committee relating to risk information and material internal controls for the Audit committee to consider and approve the internal audit plans to gain confidence that the Company has an appropriate internal control system to cope with the risks, and appropriately adopt the risk management system throughout the Company.
7. To support the culture of managing risk in the Company.
8. To perform any other duties related to risk management assigned by the board of directors.
9. To review, and provide an opinion and recommendation to, the management team to comply with the risk management of the Company and have an authority to request the documents and related persons to provide the information as well as is responsible to examine and evaluate the risks of corruption, continuously.
10. To effectively implement the anti-corruption policies. To regularly review, monitor, reconsider and improve the anti-corruption policies and provide an evaluation report to the board of directors.
11. In addition, the duties and responsibilities of the Risk Management Committee shall be covered to its subsidiary in which it holds more than 50% of Company's voting shares.

7.4 MANAGEMENT INFORMATION

7.4.1 AS OF 31 DECEMBER 2022, THERE ARE 8 EXECUTIVES AS BELOW

Name - Surname	Position
1. Mr. Somkiat Masunthasuwun	Chief Executive Officer
2. Mr. Akarin Prathuangsit	Chief Operating Officer
3. Mr. Prapon Chinudomsub	Chief Financial Officer
4. Mr. Khamhoung Ratsamany	Vice President - Utilities Operations
5. Mr. Varanon Laosuwan	Director - Utilities Business Development
6. Mr. Punrapee Noparumpa	Director - Power Business Development
7. Mr. Sumet Tepkhom	Director - International Power Business Development
8. Mrs. Rattana Shinawatra	Director - Accounting

No. 1 - 8 are executives according to the definition of the SEC.

DUTIES AND RESPONSIBILITIES OF THE CHIEF EXECUTIVE OFFICER

1. To determine policy, strategy, structure and management authority as well as to take responsibility for setting up the strategy and annual budget plans and proposing these to the board of directors.
2. To follow up, control, supervise and operate and/or manage regular tasks to comply with the policies, plans and budgets approved by the board of directors.
3. To be an authorized person of the Company and to operate the business to comply with the Company's objectives, articles of association, policies, rules, regulations, orders, shareholders' resolutions and/or board of director's resolutions.
4. To take actions and perform duties as the representative of the Company toward third parties in related business which would be beneficial to the Company.
5. To consider and approve the business operation plans of each department of the Company, to approve any action of each department of the Company which is subject to the assigned table on the authority to operate business and the transactions entered into by the Company.
6. To give orders, issue regulations, make announcements and records in order to perform the work to be in accordance with the policies and benefits of the Company and to maintain internal regulations of the Company.

7. To sub-authorize and/or assign a person to take action on behalf of the Chief Executive Officer. In this regard, the sub-authorizing and/or assignment shall be under the scope of authority prescribed in the power of attorney of the Company and/or regulations, rules or orders which are specified by the board of directors and/or the Company.
8. To approve related party transactions for normal operation such as the sale and purchase of goods at market price, service fees at the normal rate and giving credit terms similar to general customers, etc. pursuant to the policies approved by the board of directors.
9. To have authorities, duties and responsibilities to manage the Company's subsidiaries and other departments of the Company.
10. To establish Anti-Corruption risk assessment in risky working processes.
11. To establish encouragements and support for the Anti-Corruption Policy and communication to employees and related parties.
12. To implement the Anti-Corruption Policy and framework continuously and entirely.
13. To update relevant systems and measures with changes in business practice, regulations, articles and legal requirements.

14. To perform other work as assigned by the board of directors on a case-by-case basis

7.4.2 POLICY OF REMUNERATION FOR MANAGEMENT

The Company provides the policy on the remuneration for the managements, which will be based on the duties, responsibilities and achievements connected to the KPIs which consist of financial, stakeholder, internal work processes, and learning and growth of the Company and the workforce in addition to their respective annual performances (short-term) and achievement of the Company's strategic goals in long-term including related factors and to be consistent with the same industry.

The annual remuneration of the top management, CEO, COO, and CFO will be considered and reviewed by the Nomination and Remuneration committee which shall be further reviewed and approved by the board of directors while the CEO decides the remuneration for management against their respective performances and such remuneration must conform to the Company's criteria.

7.4.3 REMUNERATION OF MANAGEMENT

(1) MONETARY REMUNERATION

Details of monetary remuneration of managements of the Company (excluding remuneration as directors) for the year ended 31 December 2020, 31 December 2021, and 31 December 2022 are as follows :

	Year 2020	Year 2021	Year 2022
Number of persons	7	7	8
Total remuneration (THB million)	28.61	27.91	45.56

(2) OTHER REMUNERATIONS

For the year 2022, the Company contributed to the provident fund to the management as employees of the Company at THB 2.77 million.

7.5 PERSONNEL

NUMBER OF PERSONNEL

The number of personnel of the Company and its Subsidiaries (excluding executives) across the divisions of the Company from 2020 to 2022 was 164 person, details as follows :

Division	Number of personnel		
	As of 31 Dec 2020	As of 31 Dec 2021	As of 31 Dec 2022
Utilities Operations	83	84	89
Utilities Business Development	4	4	5
Power Business Development	7	12	15
Construction and Power Operation	11	23	32
International Utilities Business Development	0	1	0
Accounting	3	3	4
Finance and Investor Relations	5	6	7
Corporate Secretary	3	3	3
Compliance	3	4	3
Management Support	3	3	4
Internal Audit	0	0	2
Total	122	144	164

REMUNERATION OF PERSONNEL (EXCLUDING EXECUTIVES)

The Company's policy provides for suitable compensation to employees in line with their performance outcomes. For the short term, this compensation is the bonus, in turn linked to company performance. For the long term, this compensation means the provident fund, a form of welfare that gives employees financial guarantee.

The Company employee's annual salary increase is considered according to their performance. To this end, KPIs were applied to manage employee performance evaluation, which would be accordingly reflected in their salary increases and benefits. Employee KPIs could be divided into corporate KPIs and functional KPIs.

Details of Remuneration of personnel (excluding executives) from 2020 to 2022 are as follows :

	Fiscal year ended 31 Dec 2020 (Million THB)	Fiscal year ended 31 Dec 2021 (Million THB)	Fiscal year ended 31 Dec 2022 (Million THB)
Monthly salary ¹	58.37	67.15	96.13
Other remunerations ²	2.78	3.07	3.81
Total	61.15	70.22	99.94

Notes :

¹ Including bonus

² Including provident fund.

RATIO : AVERAGE FEMALE SALARY/AVERAGE MALE SALARY

	2022	
	Male	Female
Management level (base salary only)	401,000	318,000
Non-management level (base salary only)	51,000	57,000

PERSONNEL DEVELOPMENT POLICY

1. DEVELOPMENT OF DIRECTORS AND MANAGERMENTS

- 1.1 The Company promotes and facilitates the training and development of knowledge of persons relating to corporate governance policy of the Company, such as directors, Audit Committee, Company Secretary, in order to continuously improve their performance. The training may be internal training and/or external training.
- 1.2 The management division will provide documents and information useful for performing the duties of a new director, including the nature of business and business guidelines of the Company.

2. DEVELOPMENT OF EMPLOYEES

The Company is aware of the importance of human resource development. Therefore, the Company focuses on being a learning organisation by having policies to support and facilitate the training and development of knowledge suitable for personnel in every division.

Details of the Personnel development

	Total Training Hour (hrs./year)			Average Training Hour (hrs./person/year)		
	Year 2020	Year 2021	Year 2022	Year 2020	Year 2021	Year 2022
Managements and Employees	2,463	3,871.06	3,941	19.09	26.88	24.03

ยกระดับทักษะคุณ ทักษะการทำงาน MICROSOFT EXCEL LEVEL UP!

Microsoft Excel เป็นโปรแกรมยอดนิยม ที่ทั้งหลายอย่างขาดไม่ได้ สามารถรองรับงาน (Excel เป็น Super Tool) แต่ในด้านการทำงานที่ซับซ้อน เช่น ทำตารางคำนวณ รองรับการเขียนสูตรคำนวณที่ซับซ้อน ทำกราฟ วิเคราะห์ข้อมูล ทำตาราง Pivot Table ซึ่งสามารถนำความรู้นี้ไปต่อยอดในเรื่อง Power Query และ Power BI ได้อีกด้วย

คุณศิริ เอกบุตร
ผู้ก่อตั้งเว็บไซต์สอนงาน "ถามก็ตอบ Thep Excel"
และเจ้าของหนังสือ Excel ฉบับ Best Seller

เนื้อหาที่มีอะไรบ้าง :

- การใช้เครื่องมือ Table เมื่อใช้ Dynamic Range แบบง่าย
- การสรุปผลหรือการคำนวณอย่างง่ายด้วย Pivot Table ซึ่งเป็นเครื่องมือที่ค่าตัวสูง
- การทำ Dashboard เรื่องการพัฒนาระบบหลากหลายแบบเมื่อเป็นเครื่องมือ
- การจัดการข้อมูลใน Excel SUMIFS, COUNTIFS ด้วยฟังก์ชัน
- การใช้ Data Validation เพื่อป้องกันข้อผิดพลาดในการคำนวณ
- การใช้ Conditional Formatting เพื่อเปลี่ยนรูปแบบการแสดงผลตามเงื่อนไขที่กำหนด
- เรียนรู้ฟังก์ชันของ Excel ทั้ง IF, VLOOKUP, MATCH, INDEX
- Mini Project / ทำแบบประยุกต์ สรุปภาพรวมสิ่งที่ได้เรียนมา

หลักสูตรนี้เหมาะสำหรับ

- ผู้ที่อยากลดเวลาในการทำงานที่ต้องใช้ EXCEL เป็นหลัก
- ผู้ที่ใช้ EXCEL มาแล้วในระดับหนึ่ง แต่ยังไม่รู้เทคนิคการทำงานของตัวเอง ซึ่งสูตรที่คนอื่นสอนให้ใช้ยังไม่รู้ หรือมีปัญหาที่แก้ไม่ได้

เงื่อนไขการสมัครอบรม
ต้องทำใหครบทั้ง 2 ขั้นตอน ดังนี้

ลงทะเบียน

หลักสูตรภาคบังคับสำหรับพนักงาน WHA ทุกคน

RISK MANAGEMENT
Principles, Tools & Techniques **การบริหารความเสี่ยง Vol.2**
หลักการสำคัญ เครื่องมือ และเทคนิคที่เกี่ยวข้อง

เพื่อเสริมสร้างความรู้ ความเข้าใจ และตระหนักถึงความสำคัญของการบริหารความเสี่ยง รวมถึงทำความเข้าใจกับเครื่องมือ และเทคนิคที่เกี่ยวข้อง

- ความหมาย ความสำคัญ และประโยชน์ของการบริหารความเสี่ยง
- ความเสี่ยงเกิดมาจากอะไร และมีกี่ประเภท
- วิเคราะห์ ระบุ ประเมินความเสี่ยงอย่างไรให้เกิดประโยชน์
- เราสามารถบริหารจัดการความเสี่ยงได้อย่างไรบ้าง
- ข้อควรระวังในกระบวนการบริหารความเสี่ยง
- เรียนรู้เพิ่มเติมจากกรณีตัวอย่าง

เปิดอบรม 4 รุ่น
ผ่าน MS Teams

รุ่นที่ 1 : วันอังคารที่ 12 กรกฎาคม 2565
เวลา 10:00 - 11:30 น.

Click

ขอแนะนำ

People Learning & Development

SharePoint

ช่องทางการสื่อสาร และแหล่งการเรียนรู้มากมาย พร้อมติดอาวุธให้พวกเราชาว WHA แล้ววันนี้

- แผนการฝึกอบรมประจำปี 2565
- คลิปวิดีโอข้อสงสัยในหลักสูตรที่น่าสนใจ
- หลักสูตรที่เปิดอบรม
- เอกสารประกอบการอบรมหลักสูตรต่าง ๆ
- บทความที่น่าสนใจมากมาย



คลิกเลยคริมน รออีกได้!!

มีอะไรน่าสนใจบ้างนะ

Learning Category

- Compulsory / Common Course
- Soft Skills (Self Development)
- Functional Skills (Operational Excellence)
- Digital Skills
- Innovation & Change
- Leadership Program
- Knowledge Base (คลังความรู้)

Learning Category

แบ่งเนื้อหาตามกลุ่มการเรียนรู้

- หลักสูตรที่กำลังเปิดอบรม และหลักสูตรในอนาคต
- ทบทวนเนื้อหาจากหลักสูตรที่เคยเปิดอบรมที่ผ่านมา

Upcoming Program

หลักสูตรฝึกอบรมเปิดใหม่ที่น่าสนใจ
เลือกเรียนรู้ได้ตามข้อกำหนด

Upcoming Program

Digital Transformation Leadership

แผนฝึกอบรมประจำปี และเอกสารประกอบการอบรมหลักสูตรต่าง ๆ

Learning & Development Program 2022

ปฏิทินอบรม

Aug 3: หลักสูตรอบรม ISO 9001:2015

Aug 10: หลักสูตรอบรม ISO 9001:2015

Aug 11: Power BI - Basic

Aug 16: Power BI - Advance

ปีนี้เปิดอบรมอะไรบ้าง มาดูกันตรงนี้นะ

- แผนการฝึกอบรมประจำปี
- ปฏิทินการอบรมหลักสูตรต่าง ๆ

News

แนะนำหลักสูตร Digital Literacy (e-learning) 2...
Trend 2022 (จากบทสัมภาษณ์: READY SET GO...
ข่าว 2022 จากเวทีงาน READY SET GO...
ข่าว 2022 จากเวทีงาน READY SET GO...

สาระความรู้ดี ๆ มากมาย

แนะนำเนื้อหาสาระดี ๆ มากมายสำหรับ
พัฒนาตนเอง

Highlight

ขอแนะนำแหล่งรวมความรู้ที่น่าสนใจ



Knowledge Base (คลังความรู้)
(หนึ่งใน Learning Category)



E-Book



Book Brief



Podcast



Microlearning

สอบถามรายละเอียดเพิ่มเติมได้ที่ : คุณสุจิตตา ตูลบสีตะ (สุ) Tel. 061-560-6750, Mitel : 9008

7.6 OTHER KEY INFORMATION

7.6.1 LIST OF OFFICERS RESPONSIBLE FOR THE FOLLOWING KEY DUTIES OF THE COMPANY

CORPORATE SECRETARY

The Board of Directors' meeting No. 5/2017, held on 30 May 2017, approved the appointment of Ms. Nutch Rattanajitbanjong to be the Corporate Secretary in order to act on behalf of the Company and/or the Board of Directors. The Corporate Secretary's scope of authority, duty and responsibility are as follows :

1. Providing preliminary recommendation to directors according to related laws, rules and regulations;
2. Providing advice for convening the shareholders' meetings in order to be in compliance with laws, regulations and guidelines, including preparing the notice of the shareholders' meetings;
3. Recording the minutes of the shareholders' and the Board of Directors' meetings, including monitoring the compliance of the resolution of the shareholders' and the Board of Directors' meetings;
4. Monitoring the disclosure and information memorandum to the public according to related regulations and notifications;
5. Preparing and keeping the following documents :
 - (a) director register book;
 - (b) the notice and minutes of the Board of Directors' meeting and the annual report of the Company; and
 - (c) the notice and minutes of the shareholders' meeting;
6. Keeping reports on the interests of directors and executives; and
7. Performing any other actions as specified by the Capital Market Supervisory Board.

Her profile and qualifications appear in Attachment 1.

DIRECTLY RESPONSIBLE PERSON FOR ACCOUNTING

The Company has assigned Mrs. Rattana Shinawatra, Director of Accounting, to be directly responsible for corporate accounting supervision. Her profile appears in Attachment 1.

HEAD OF INTERNAL AUDIT

The Company appointed KPMG Phoomchai Business Advisory Ltd. (KPMG) as the Company's internal auditor, and KPMG designated Mr. Supachate Kunaluckkul to take charge of the Company's annual internal audit.

After reviewing the background of KPMG and Mr. Supachate Kunaluckkul, the Audit Committee found that Mr. Supachate Kunaluckkul is suitable for the designated function, considering her independence to make a judgment in internal audit and her understanding of the Company's activities and operations. Therefore, an appointment, removal or transfer of the head of internal control requires an approval from the Audit Committee. Profile of the Head of Internal Audit shows in Attachment 3.

HEAD OF COMPLIANCE

The Company has assigned Mr. Jirayu Chompoorat to head compliance and ensure corporate compliance with regulations applicable to the Company Businesses and the profile of the Head of Compliance appears in Attachment 3

7.6.2 INVESTOR RELATIONS OFFICER AND CONTACT

Investors and related parties can make queries or ask for the Company's information at Ms. Pailin Yapiangplook, Investor Relations Manager, Tel. 0-2719-9559 or E-mail address : ir@wha-up.com

7.6.3 AUDIT AND NON-AUDIT FEES

AUDIT FEES

For the year ended 31 December 2022, the Company and its subsidiaries paid PricewaterhouseCoopers ABAS Ltd. (PwC) for the audit of the consolidated financial statements in the amount of THB 2,452,000.

NON-AUDIT FEE

- None -

The person or business related to the auditor and the audit office is not a person or business related to the Company.



KEY GOOD CORPORATE GOVERNANCE IMPLEMENTATION

8.1 PERFORMANCE OF THE BOARD OF DIRECTORS IN 2022

8.1.1 NOMINATION, DEVELOPMENT AND PERFORMANCE ASSESSMENT OF DIRECTORS

(1) NOMINATION OF INDEPENDENT DIRECTORS

As of 31 December 2022, out of the 10 directors on the Board, the Company had a total of 4 independent directors, who are independence from the company's management and major shareholders, in line with SEC's criteria which stipulated that at least one third of the members of the Board, but no fewer than three, must be independent directors.

The Board has assigned the Nomination and Remuneration Committee to nominate qualified candidates to be appointed as the Company's directors. The Nomination and Remuneration Committee will consider the qualifications of qualified candidates which having higher qualification compare to the qualification according to such prescribed in regulation of SET and SEC which the Company's Independent Director's Definition as follows :

1. Holding no more than 0.5 percent of all voting shares of the Company, its parent company, subsidiaries, associated companies, major shareholders or controllers, inclusive of the shareholding by those related to that particular independent director;
2. Not being or never having been a director participating in administration, an employee, staff member, advisor who receives regular salary or a controller of the Company, its parent company, subsidiaries, associated companies, subsidiaries of the same tier, major shareholders or of a controller of the Company, unless such status has lapsed for at least 2 years, and such prohibited characteristics exclude an event where an independent director was a civil servant or

an advisor to a government agency, which is a major shareholder or a controller of the Company;

3. Not being a person with any blood relation or by lawful marriage, whether as a father, mother, spouse, sibling and offspring, including offspring's spouse, of another director, executive, major shareholder, controller or a person nominated as director, executive or controller of the Company or subsidiaries;
4. Not or never having any business relationship with the Company, its parent company, subsidiaries, associated companies, major shareholders or controllers in such manner which may interfere with the exercise of his/her independent judgment, and not being or never having been a material shareholder or controller with business relationship with the Company, its parent company, subsidiaries, associated companies, major shareholders or controllers, unless such status has lapsed for at least 2 years;

Such business relationship under paragraph one includes any transactions in the ordinary course of business in taking on lease or leasing out of real property, transactions relating to assets or services or granting or acceptance of financial support by way of borrowing or lending, guarantee, provision of assets as security against liabilities, including other similar circumstances, which result in the Company or the contractual party to perform an obligation to the other party, representing 3 percent of the Company's net tangible assets or THB 20 million or above, whichever is lower. The calculation of such liability follows the calculation method of the value of connected transactions under the Notification of the Capital Market Supervisory Board on Rules on Connected Transactions, mutatis mutandis, provided that such liability includes those arising during the period of 1 year prior to the occurrence of such business relationship with that particular person;

5. Not being or never having been an auditor of the Company, its parent company, subsidiaries, associated companies, major shareholders or controllers, and not being a material shareholder, controller or partner of such audit firm where the auditor of the Company, its parent company, subsidiaries, associated companies, major shareholders or controllers is employed, unless such status has lapsed for at least 2 years;

The term “partner” refers to any person authorized by an audit firm to sign an auditor’s report on behalf of that entity.

6. Not being or never having been a professional service provider, including legal consultant or financial advisor which earns more than THB 2 million of service fees per year from the Company, its parent company, subsidiaries, associated companies, major shareholders or controllers, and not being a material shareholder, controller or partner of that professional service provider, unless such status has lapsed for at least 2 years;

The term “partner” refers to any person authorized by a professional service provider to sign a professional service report on behalf of that entity.

7. Not being a director appointed to represent the Company, a major shareholder or any shareholder which is related to a major shareholder;
8. Not engaging in any business identical to and in competition with that of the Company or its subsidiaries, or not being a material partner in any partnership nor being a director participating in administration, an employee, staff member, advisor who receives regular salary, or holding more than 1 percent of all voting shares of another company which engages in any business identical to and in competition with that of the Company or its subsidiaries;
9. Having no other characteristics which prevent him/her from independently providing an opinion on the Company’s operations;

The Company stipulated that Independent directors can serve as directors of the Company for a period of no more than 9 consecutive years except pursuant to the approval of shareholders.

(2) NOMINATION OF DIRECTORS AND THE TOP MANagements

(2.1) NOMINATION OF DIRECTORS

The Nomination and Remuneration Committee is responsible for director nomination by considering the Board structure according to the Board Skill Matrix and Board Diversity, to determine of diversity on qualifications, knowledge, skills, experiences, gender, and age of new directors so that the Board of Directors’ component was in line with the Group’s business strategy. The appointment of new director shall be complied with Public Company Limited Act. The criteria of director nomination are follows :

- 1) The nominated director shall have knowledge, competency and experience of company business including professional and specific skill, education, age and gender and in line with the Board Diversity Policy.
- 2) The nominated director shall have leadership, vision, ethic, good attitude to company as well as time to devote themselves to company
- 3) The nominated director shall not be in Blacklist from any organization including the securities and exchange commission or have been sentenced to any crime
- 4) In case of independent director, the nominated director shall be qualified with independent director qualification as determined by the Securities Exchange Commission. All of the Company’s independent directors are independent of management and majority shareholders. Independent directors are eligible to serve as the director of a maximum of five listed companies.
- 5) The Company’s directors must have any other qualifications based on Board’s structure and component and company’s direction through transparent nomination process to build trust with shareholders.

After nomination process, the Nomination and Remuneration Committee shall propose the nominated director to Board Meeting for appointment as required by law. In case of the appointment shall be approved by shareholder meeting. The Board shall be proposed to shareholder meeting for approval pursuant to the following rules :

- (1) One share will have one vote.
- (2) Each shareholder may vote all of his rights under clause (1) to appoint one director or more to serve as the Company's director. If the shareholders vote to appoint more than one director, such shareholders' voting rights shall be equal for all candidates.
- (3) The candidate with the most electoral votes shall be appointed as a director to fill the vacant seat. If the voting results for the following vacant seat are equal, the chairman of the meeting shall have a casting vote.

(2.2) NOMINATION OF CHIEF EXECUTIVE OFFICER (CEO)/SUCCESSION PLAN

The Nomination and Remuneration Committee is responsible for CEO nomination with criteria of director nomination are follows :

NOMINATION PROCEDURE

1. The Nomination and Remuneration Committee will consider the suitable persons, which the nomination can be from 2 sources : inside and outside the company.
2. For nomination of CEO, the Nomination and Remuneration Committee will use one of the nomination methods, i.e. searching from persons with knowledge, abilities, and experiences suitable for the Company or from nominations proposed from the Company's Board of Directors or high-level executives.
3. After the selection of the suitable person, the Nomination and Remuneration Committee will propose such person name to the Board of Directors' meeting for further appointment.

NOMINATION CRITERIA

1. Having knowledge, competency, skill, and experience of company management and experience in operating both of Utilities Business and Power Business including professional and specific skill to be in line with the Company's business strategy without gender discrimination, age, race, etc.

2. Having leadership, vision, ethic, good attitude to company as well as time to devote themselves to company.
3. Having work transparency experience and not being on Blacklist from any Organization including the Securities and Exchange Commission or have been sentenced to any crime including must have no prohibited characteristics, as prescribed by the law.

CEO'S PERFORMANCE ASSESSMENT AND REMUNERATION

The Company executed CEO's Performance Assessment each year. The Nomination and Remuneration Committee, in charge of the annual performance assessment of the CEO, must forward the assessment outcome to the Board for endorsement. The performance assessment for the CEO has several parts, e.g. Leadership, Strategy formulation, Strategy execution, Financial planning/Performance, Relationships with the Board, External Relations, Human Resources Management/Relations, Succession, Product/Service Knowledge, Personal Qualities. In 2022, the CEO's performance average score was 92.13%.

The performance appraisal outcome, influencing the salary raise for the CEO, is presented to the Board for further approval. The Compensation Policy also links the CEO's performance to overall short-term performance, operating performance, and long-term strategic objectives. This practice laid a foundation for future business growth to a motivational-level and comparable to organizations within the same industry, under clear-cut and transparent rules.

SUCCESSION PLAN

The Company recognises the importance of a succession plan. The Company, therefore, prepared a succession plan to cover significant positions, and on an ongoing basis selects qualified persons to serve in such positions and arranges training for such candidates to serve such positions in the future, thus ensuring that the Company will have knowledgeable and capable executives to succeed in such positions in the future. In 2022, the progress of succession planning is constantly being reported to the Nomination and Remuneration.

(3) DEVELOPMENT OF DIRECTORS AND MANAGERMENTS

1. The Company encourages training and knowledge sharing for all parties related to corporate governance, such as directors, members of the Audit committee, executives, the Company Secretary, etc. to promote continuous performance improvement. Training and knowledge sharing may be held internally by the Company or provided by external institutions.
2. New directors should be provided with all documents and information useful to perform their duties, including an introduction to the nature of the business and the operations of the Company.

Directors' Training with Thai Institute of Directors (IOD)

No.	Name - Surname	DCP	DAP	RCP	ACP	AACP	ACEP	Others
1.	Ms. Jareeporn Jarukornsakul	94/2012	210/2015	46/2020				CGI 17/2016 DLCP 0/2021
2.	Mr. Weidt Nuchjalearn		SEC/2015	31/2013				
3.	Mr. Ekajai Tivutanond		127/2016			32/2019		BNCP 9/2020
4.	Mrs. Punnee Worawuthichongsathit	38/2003	2/2003	25/2011	2/2004		10/2014	ITG 4/2017 ELP 2/2015 RCC 7/2008 ACPG 10/2014 RNG 1/2011 MFM 1/2009 RE DCP 2/2009 CDC 7/2008 MIA 1/2007 MFR 5/2007 MIR 2/2008 DLCP 7/2022
5.	Mr. Numchai Lowattanakul	140/2011						
6.	Mr. David Richard Nardone	57/2005						
7.	Mr. Vivat Jiratikarnsakul	38/2003	2/2003				2/2014	
8.	Mr. Somkiat Masunthasuwun	176/2013	195/2022					DLCP 7/2022
9.	Mr. Pajongwit Pongsivapai							SGP 3/2022
10.	Mr. Krailuck Asawachatroj	175/2014						

DCP : Director Certification Program

DAP : Director Accreditation Program

RCP : Role of the Chairman Program

ACP : Audit Committee Program

AACP : Advanced Audit Committee Program

ACEP : Anti-corruption for Executive Program

ACPG : Anti-Corruption the Practical Guide

MIA : Monitoring the Internal Audit Function

ITG : IT Governance and Cyber Resilience Program

BNCP : Board Nomination and Compensation Program

MIR : Monitoring the System of Internal Control & Risk Management

RNG : Role of the Nomination and Governance Committee

RCC : Role of Compensation Committee

FSD : Financial Statements for Directors

MFM : Monitoring Fraud Risk Management

RE DCP : DCP Refresher Course

CDC : Charter Director Class

ELP : Ethical Leadership Program

MFR : Monitoring the Quality of Financial Reporting

CGI : Corporate Governance for Capital Market Intermediaries

DLCP : Director Leadership Certification Program

SGP : Subsidiary Governance Program

Development Activities and Training Attended by Directors in 2022

No.	Name - Surname/Position	Training Course/Seminar in year 2022
1.	Ms. Jareeporn Jarukornsakul	<ul style="list-style-type: none"> - ESG & Climate Change (In-House by WHA ESG Working Team) - Key Trend of 2023 Global Risk focus recommended by European Confederation Institutes of Internal Auditing (ECIIA) and Mckinsey (In-House Training)
2.	Mr. Weidt Nuchjalearn	<ul style="list-style-type: none"> - ESG & Climate Change (In-House by WHA ESG Working Team)
3.	Mr. Ekajai Tivutanond	<ul style="list-style-type: none"> - ESG & Climate Change (In-House by WHA ESG Working Team)
4.	Mrs. Punnee Worawuthichongsathit	<ul style="list-style-type: none"> - ESG & Climate Change (In-House by WHA ESG Working Team) - Class Action by Faculty of Law, Chulalongkorn University in collaboration with Thai Investor Association - Director Leadership Certification Program (DLCP 7/2022) by IOD
5.	Mr. Numchai Lowattanatakul	<ul style="list-style-type: none"> - ESG & Climate Change (In-House by WHA ESG Working Team)
6.	Mr. David Richard Nardone	<ul style="list-style-type: none"> - ESG & Climate Change (In-House by WHA ESG Working Team) - Key Trend of 2023 Global Risk focus recommended by European Confederation Institutes of Internal Auditing (ECIIA) and Mckinsey (In-House Training) - Thai Property Market Update by AMCHAM - US China Relationship Going Forward by Northeastern University - Redesign the World with Sam Pitrode by Northeastern University - State of Manufacturing in Thailand by AMCHAM - Translating Engagement in Value-Talent Attraction & Retention strategies for Manufacture by AMCHAM - A New Beginning Circular Economy for Manufacturing on Eastern Seaboard by AMCHAM - China Belt & Road Initiative and International Business by Northeastern University - Thailand's EEC Initiative - A new post covid paradigm by AMCHAM
7.	Mr. Vivat Jiratikarnsakul	<ul style="list-style-type: none"> - ESG & Climate Change (In-House by WHA ESG Working Team) - Key Trend of 2023 Global Risk focus recommended by European Confederation Institutes of Internal Auditing (ECIIA) and Mckinsey (In-House Training) - Guidelines for Water Management and Main Water Pipeline Systems in the EEC Area by East Water - Thailand's Transport Infrastructure Development plans by Mahidol University - Thailand's Transport Infrastructure Development plans by IRPC
8.	Mr. Somkiat Masunthasuwun	<ul style="list-style-type: none"> - ESG & Climate Change (In-House by WHA ESG Working Team) - Director Accreditation Program (DAP 195/2022) by IOD - Director Leadership Certification Program (DLCP 7/2022) by IOD
9.	Mr. Pajongwit Pongsivapai	<ul style="list-style-type: none"> - ESG & Climate Change (In-House by WHA ESG Working Team) - Key Trend of 2023 Global Risk focus recommended by European Confederation Institutes of Internal Auditing (ECIIA) and Mckinsey (In-House Training) - Subsidiary Governance Program (SGP 3/2022) by IOD
10.	Mr. Krailuck Asawachatroj	<ul style="list-style-type: none"> - ESG & Climate Change (In-House by WHA ESG Working Team) - Key Trend of 2023 Global Risk focus recommended by European Confederation Institutes of Internal Auditing (ECIIA) and Mckinsey (In-House Training) - CMA 31, Capital Market Academy

ORIENTATION OF NEW DIRECTORS

In performing its duties, the director must understand the nature of the business of the Company. Therefore, in case of a change of directorship, the Company will provide an orientation for a new director to understand the nature of, and guidelines on, the business operation as a whole

and will share the material information and corporate governance guidelines necessary for the satisfactory performance of the director. The Company Secretary will coordinate for such orientation.

In 2022, the Company's directors attended the Orientation of New Directors were Mr. Somkiat Masunthasuwun and Mr. Pajongwit Pongsivapai.

POLICY ON RESTRICTION ON NUMBER OF COMPANIES AND NUMBER OF TERMS OF DIRECTOR

The Company has a policy stipulating that its directors may serve as directors at no more than five other listed companies, without exception.

Moreover, the Company has a policy that requires that the Chief Executive Officer shall not be a director in other companies in the same or similar type of business except related companies, and/or subsidiaries, and/or associates, to ensure that the Company will have no conflict of interest.

(4) EVALUATION OF PERFORMANCE OF BOARD OF DIRECTORS

The Company provides for the annual self-evaluation of directors to jointly consider and summarise their performance in relation to their review of the board of directors' performance, problems and obstacles, and the offering of solutions to improve overall performance and effectiveness of the board of directors. The assessment is divided into three types, namely the performance assessment of the Board of Directors as a whole and the self-assessment and Sub-committee. The Company based its guidelines for evaluation of the board of directors on the guidelines of the SET. The result of the evaluation will play an important role in developing the efficient performance of duties of the board of directors.

For the Board's Performance Assessment Criteria, the Company's appraisal form covers additional significant criteria as follows :

1. Satisfaction regarding :
 - (1) Result of performance of the board of directors as a whole;
 - (2) Result of business operation of the Company; and
 - (3) Proceeding with solving problems by management.
2. Understanding on :
 - (1) Roles and duties;
 - (2) Company's business; and
 - (3) Company's strategy.
3. Good relationships between the board of directors and management
4. Efficiency of subsidiaries and committees
5. Sufficient and appropriate time allocation by the board of directors to consider the following issues :
 - (1) Policy and direction of the Company;
 - (2) Business performance of the Company; and
 - (3) Solution in case of non-achievement.
6. Preparation by the board of directors to attend the meeting
7. Independence of the board of directors in expressing opinions
8. Neutral opinion of the board of directors
9. Opportunity and support given by the chairman to every director to independently express his/her opinion
10. Opinion of the board of directors on investors' confidence in the board of directors
11. Acceptability among employees on corporate governance practice of the Company.

For the Board's Performance Assessment Process, the Company Secretary will provide directors with the evaluation form at the end of each year and will report the summary to the board of directors for further consideration and discussion annually.

The overall evaluation results for 2022 are shown, as follows :

Performance Evaluation of the Board of Directors	Average	Evaluation
Board of Directors	96.56	Excellent
Individual Directors	99.42	Excellent
Audit Committee	100.00	Excellent
Nomination and Remuneration Committee	94.44	Excellent
Corporate Governance and Sustainable Development Committee	98.33	Excellent
Risk Management Committee	100.00	Excellent



8.1.2 THE BOARD OF DIRECTORS' MEETING AND DIRECTOR REMUNERATION

(1) THE BOARD OF DIRECTORS' MEETING

The Company shall hold the board of directors' meeting of not less than six times per year and its schedule and agenda shall be clearly set in advance. The Company may hold ad hoc meetings in order to consider any urgent matters. Therefore, the board of directors acknowledged the Meeting Schedule of the Board of Directors and Sub-Committee for the year 2023 at the Board of Directors' Meeting No. 8/2022 on 20 October 2022.

For the Board of the Directors' Meeting, the document for the said Meeting shall be distributed to the Directors for acknowledgement and consideration in advance 5 working days before the said Meeting occurs. Top managements of the Company may attend board meetings to present material details and directly acknowledge policies. In addition, non-executive directors should be able to meet among themselves, without the management team, in order to discuss their concerns at least once a year.

In 2022, the Company managed a total of 10 Board Meetings with the entire Board of Directors attended the meeting of 100%, 7 Audit Committee Meetings, 9 Executive Committee Meetings, 3 Corporate Governance and Sustainable Development Committee Meetings, 4 Risk Management Committee Meetings, 4 Nomination and Remuneration Committee Meetings and 1 Non-Executive Director meeting in the absence of the executives.

The Executive committee shall consider and set the board meeting agenda. Each member of the committee should be free to propose an issue for a meeting agenda and to express their opinions. Then, the Company Secretary shall prepare the agenda papers and the notice of the board meeting. Approval in the board of directors' meetings will be made by majority votes, and one director has one vote. Interested directors shall not attend the meeting or shall refrain from voting in such issues. The quorum requires not less than two-third of the total number to pass a resolution.

The Board of Directors set a policy that each director should attend the meeting not less than 75 percent of all board meetings in any whole financial reporting year. The meeting attendance of directors in 2022 are as follow :

Name	Position	Board of Directors 10 members Meeting 10 Times	Audit Committee 3 members Meeting 7 Times	Executive Committee 8 members Meeting 9 Times	Corporate Governance and Sustainable Development Committee 3 members Meeting 3 Times	Risk Management Committee 3 members Meeting 4 Times	Nomination and Remuneration Committee 3 members Meeting 4 Times	Shareholders' Meeting 9 members Meeting 1 Time
1. Ms. Jareeporn Jarukornsakul	- Chairman of the Board of Director - Chairman of the Executive Committee - Chairman of the Risk Management Committee - Nomination and Remuneration Committee	10/10 (100%)	-	9/9	-	4/4	4/4	1/1
2. Mr. Weidt Nuchjalearn	- Director - Chairman of the Audit Committee/ Independent Director - Chairman of the Nomination and Remuneration Committee	10/10 (100%)	7/7	-	-	-	4/4	1/1
3. Mr. Ekajai Tivutanond	- Director - Audit Committee/Independent Director - Corporate Governance and Sustainable Development Committee - Nomination and Remuneration Committee	10/10 (100%)	7/7	-	3/3	-	4/4	1/1
4. Mrs. Punnee Worawuthichongsathit	- Director - Audit Committee/Independent Director - Chairman of the Corporate Governance and Sustainable Development Committee	10/10 (100%)	7/7	-	3/3	-	-	1/1
5. Mr. Numchai Lowattanakul	- Director - Independent Director - Risk Management Committee	10/10 (100%)	-	-	-	4/4	-	1/1
6. Mr. David Richard Nardone	- Director - Executive Committee - Risk Management Committee	10/10 (100%)	-	9/9	-	4/4	-	1/1
7. Mr. Vivat Jiratikarsakul	- Director - Executive Committee - Corporate Governance and Sustainable Development Committee	10/10 (100%)	-	9/9	3/3	-	-	1/1

Name	Position	Board of Directors	Audit Committee	Executive Committee	Corporate Governance and Sustainable Development Committee	Risk Management Committee	Nomination and Remuneration Committee	Shareholders' Meeting
		10 members	3 members	8 members	3 members	3 members	3 members	9 members
		Meeting 10 Times	Meeting 7 Times	Meeting 9 Times	Meeting 3 Times	Meeting 4 Times	Meeting 4 Times	Meeting 1 Time
8. Mr. Somkiat Masunthasuwun ⁽¹⁾	- Director - Executive Committee	7/7 (100%)	-	7/7	-	-	-	-
9. Mr. Pajongwit Pongsivapai ⁽²⁾	- Director - Executive Committee	8/8 (100%)	-	9/9	-	-	-	-
10. Mr. Krailuck Asawachairoj	- Director	10/10 (100%)	-	-	-	-	-	1/1
11. Mr. Natthapatt Tanboon-ek	- Executive Committee	-	-	9/9	-	-	-	-
12. Mr. Akarin Prathuangsit ⁽³⁾	- Executive Committee	-	-	7/7	-	-	-	-
13. Mr. Prapon Chinudomsud	- Executive Committee	-	-	9/9	-	-	-	-
14. Mr. Surathian Chakthranont ⁽⁴⁾	- Director - Independent Director - Risk Management Committee	2/2 (100%)	-	-	-	1/1	-	-
15. Mr. Nipon Bundechanan ⁽⁵⁾	- Director - Executive Committee	3/3 (100%)	-	2/2	-	-	-	1/1

Note :

- ⁽¹⁾ Appointed Mr. Somkiat Masunthasuwun as member of the Board of Directors and Executive Committee in the Board of Directors Meeting No. 3/2022 on 22 April 2022, but effective on 23 April 2022
- ⁽²⁾ Appointed Mr. Pajongwit Pongsivapai as member of the Board of Directors in the Annual General Meeting of Shareholders 2022 on 22 April 2022.
- ⁽³⁾ Appointed Mr. Akarin Prathuangsit as member of the Executive Committee in the Board of Directors Meeting No. 3/2022 on 22 April 2022, but effective on 23 April 2022.
- ⁽⁴⁾ Retired by rotation of Mr. Surathian Chakthranont as a member of the Board of Directors in the Annual General Meeting of Shareholders 2022 on 22 April 2022.
- ⁽⁵⁾ Resignation of Mr. Nipon Bundechanan as a member of the Board of Directors and Executive Committee effective from 23 April 2022.

(2) DIRECTOR REMUNERATION

(2.1) MONETARY REMUNERATION

The Annual General Meeting of Shareholders 2022, held on 22 April 2022, approved the remuneration of the directors and sub-committee of the Company for year 2022, by dividing the payment into three categories i.e., in forms of meeting allowance, directors' remuneration and bonus. The details are as follows :

	Yearly Remuneration	Meeting Allowance
Board of Directors	Chairman THB 200,000/year Director THB 150,000/year	Chairman THB 30,000/time Director THB 25,000/time
Executive Committee	-	Chairman THB 25,000/time Member THB 15,000/time
Audit Committee	-	Chairman THB 25,000/time Member THB 15,000/time
Corporate Governance and Sustainable Development Committee	-	Chairman THB 25,000/time Member THB 15,000/time
Nomination and Remuneration Committee	-	Chairman THB 25,000/time Member THB 15,000/time
Risk Management Committee	-	Chairman THB 25,000/time Member THB 15,000/time

Bonus at the rate of 0.2 percent of the total income of the Consolidated Financial Statements and equity income of investment from associates and joint ventures based on consolidated financial statements for that year.

(2.2) OTHER REMUNERATIONS

- None -



Details of the remuneration of the Company's directors and committees for year 2022 are as follows :

(Unit : THB Baht)

No.	Name	Yearly Remuneration	Meeting Allowance						Bonus	Total
			Board of Directors	Audit Committee	Executive Committee	Corporate Governance and Sustainable Development Committee	Risk Management Committee	Nomination & Remuneration Committee		
1.	Ms. Jareeporn Jarukornsakul	200,000.00	300,000.00	-	225,000.00	-	100,000.00	60,000.00	629,697.06	1,514,697.06
2.	Mr. Weidt Nuchjalearn	150,000.00	250,000.00	175,000.00	-	-	-	100,000.00	571,926.69	1,246,926.69
3.	Mr. Ekajai Tivutanond	150,000.00	250,000.00	105,000.00	-	45,000.00	-	60,000.00	571,926.69	1,181,926.69
4.	Mrs. Punnee Worawuthichongsathit	150,000.00	250,000.00	105,000.00	-	75,000.00	-	-	571,926.69	1,151,926.69
5.	Mr. Numchai Lowattanatukul	150,000.00	250,000.00	-	-	-	60,000.00	-	571,926.69	1,031,926.69
6.	Mr. David Richard Nardone	150,000.00	250,000.00	-	135,000.00	-	60,000.00	-	571,926.69	1,166,926.69
7.	Mr. Vivat Jiratikamsakul	150,000.00	250,000.00	-	135,000.00	45,000.00	-	-	571,926.69	1,151,926.69
8.	Mr. Somkiat Masunthasuwun	100,000.00	175,000.00	-	105,000.00	-	-	-	-	380,000.00
9.	Mr. Pajongwit Pongsvipapai	100,000.00	200,000.00	-	135,000.00	-	-	-	-	435,000.00
10.	Mr. Kriluck Asawachatroj	150,000.00	250,000.00	-	-	-	-	-	571,926.69	971,926.69
11.	Mr. Natthapatt Tanboon-ek	-	-	-	135,000.00	-	-	-	-	135,000.00
12.	Mr. Akarin Prathuangsit	-	-	-	105,000.00	-	-	-	-	105,000.00
13.	Mr. Prapon Chinudomsab	-	-	-	135,000.00	-	-	-	-	135,000.00
Director who resigned in 2022 (Received Annual Bonus for 2021 Performance)										
14.	Mr. Surathian Chakhranont	50,000.00	50,000.00	-	-	-	15,000.00	-	571,926.69	686,926.69
15.	Mr. Nipphon Bundechanan	50,000.00	75,000.00	-	30,000.00	-	-	-	571,926.69	726,926.69
Total			2,550,000.00	385,000.00	1,140,000.00	165,000.00	235,000.00	220,000.00	5,777,037.27	12,022,037.27

8.1.3 GOVERNANCE OF OPERATION OF SUBSIDIARIES AND ASSOCIATES

POLICY RELATING TO AN INVESTMENT IN SUBSIDIARIES AND ASSOCIATES

The Company has a policy to invest in the public utility business, power services business, alternative energy business and related businesses

POLICY RELATING TO THE GOVERNANCE OF OPERATION AND MANAGEMENT OF SUBSIDIARIES AND ASSOCIATES

1. The Company will nominate a specified number of Company representatives to serve as directors of the subsidiaries and associates reflecting the shareholding proportion of the Company in the respective subsidiaries and associates. Such nomination of directors shall be considered and approved by the board of directors' meeting.
2. The scope of duties and responsibilities of the directors of subsidiaries and associates are as follows :
 - (1) To perform their duties in compliance with laws, objectives and the Company's articles of association, as well as the resolution of the board of directors and the resolution of shareholders' meeting with duty of loyalty, duty of care, accountability and ethics.
 - (2) To follow up and provide necessary opinion for the operation of subsidiaries and associates to be in accordance with the agreements and related rules and regulations.
 - (3) To continuously monitor the operations of subsidiaries and associates, as well as providing necessary recommendations to ensure that the operations of subsidiaries and associates are in accordance with the specified target. Such directors are able to promptly and appropriately deal with any obstacles which may occur.
 - (4) To consider, monitor and provide any necessary recommendations for subsidiaries and associates to have internal control systems and/or working systems for efficiency and effectiveness of business operation.
 - (5) Where necessary to review and improve the policies and business plans relating to the business operation of subsidiaries and associates in order to remain up-to-date and appropriate.
 - (6) The boards of directors of the subsidiaries and associates may assign one or more director or any other persons to act on behalf of such boards of directors. Such authorization shall not constitute authorization or sub-authorization in a
3. The Company shall set up necessary plans to ensure that the subsidiaries and associates shall disclose information relating to the operation and financial status, including information which is required to be disclosed to related authorities and governmental authorities, external investors and the public, and which is accurate, full and reliable.
4. When it becomes necessary for subsidiaries or associates to enter into any related party transactions or transactions which may have a conflict of interest, the Company shall monitor and ensure that subsidiaries and associates fairly and transparently enter into such transactions. The Company shall strictly comply with the rules regarding related transactions and acquisitions or disposal of assets which are regulated by related regulators.
5. The Company shall monitor and proceed with necessary actions, to ensure that subsidiaries and associates have the sufficient and appropriate system relating to the disclosure of information and the sufficient and appropriate internal control system to operate the business.
6. The Company has prescribed the guidelines requiring that nomination of persons to be directors of the subsidiaries and associates, and the exercise of voting rights at shareholders' meetings, require the approval of the board of directors, except in the following cases :
 - (1) Agenda items to be adopted by the shareholders' meeting in accordance with the joint venture agreement to which the Company is a party.
 - (2) Following regular agendas in the annual general meetings where the executive committee may consider casting the vote :
 - To certify the minutes of the previous shareholders' meeting
 - To consider and approve the report of the board of directors and performance of the past year
 - To consider and approve the annual financial statement
 - To consider and approve the allocation of net profits for the legal reserve fund and dividend payment
 - To appoint new directors to replace the directors who are due to retire by rotation and to consider director's' remuneration
 - To appoint the auditor for the year

manner which causes the directors, or the person with the authority to approve a transaction in which they have a conflict, interest, or a conflict of interest in any other manner, to be made with the Company and/or subsidiaries and/or associates.

8.1.4 MONITORING OF COMPLIANCE WITH CORPORATE GOVERNANCE POLICY AND GUIDELINE

(1) CONFLICT OF INTEREST

Any transaction between the Company and any connected persons which could turn into a conflict of interest shall be thoroughly considered by the Audit committee. If such transaction is considered to be material, it shall be approved by the board of directors and/or shareholders, depending on the type and size of the transaction, pursuant to the rules of the Capital Market Supervisory Board. Directors or executives of the Company who have such interests shall not participate in the decision-making process on such issues.

Such transactions shall be conducted under general conditions with the counterparty at fair price and on an arm's length basis without influence from a party which might have conflicting interests. In circumstances where the price cannot be determined, the Company shall refer to the report by the independent appraiser appointed by the Company in order to consider the appropriate price for both the Company and the connected person.

For the prevention of conflict of interest, the Company's directors, managements, and employees are required to produce disclosure reports that may result in possible conflicts of interest of themselves or their related persons with the Company yearly and every time a conflict is encountered.

(2) CONTROL OF INTERNAL INFORMATION

The Company has implemented policy and procedures to ensure the directors and executives do not use any non-public information for personal gain, including without limitation, insider trading. The policies are :

1. The Company shall advise its directors, executives and persons holding accounting manager or financing manager positions, or similar positions on the duty to prepare and submit the report on the holding of securities of such directors, executives, their spouses or cohabiting couple and minor children to the Office of the SEC under Section 59 and penalty under Section 275 of the Securities and Exchange Act B.E. 2535, as amended.

2. The Company shall require its directors, executives, or persons holding accounting manager or financing manager positions or similar positions to prepare and submit such report on the holding of securities of such directors, executives, their spouses or cohabiting couple and minor children through the Company Secretary prior to filing with the Office of the SEC. The report shall be prepared and filed within 30 days from the appointment date of directors and executives or within three business days from the date on which securities are purchased, sold, transferred or received.

Moreover, the Board is also responsible for monitoring the use of inside information. To this end, Directors must inform Board meetings their shareholding information, including that for the high-level executives, at the Board meeting on a quarterly basis. The shareholding information of the Directors and high-level executives at the end of previous and present year can be found in the Shareholding Report.

3. The Company shall require its directors, executives, including persons holding accounting manager or financing manager positions, or similar positions, and any related employees who have knowledge of material inside information which can potentially affect securities price to refrain from sale and purchase of securities of the Company during the period prior to the disclosure of financial statements or financial status of the Company until such information has been disclosed to the public, during the Blackout Period. Blackout Period means the period of one month prior to, and on the date which, the financial report of the Company has been disclosed annually and on a quarterly basis. The Company will advise in writing its directors and executives, including persons holding accounting manager or financing manager positions, or similar positions, to refrain from sale and purchase of securities of the Company. Such advice shall be sent at least 30 days in advance prior to the disclosure of information to the public and shall wait for at least 24 hours after the disclosure of information to the public. The disclosure of material information to other persons is also prohibited.

In 2022, no directors or managements were found to purchase or sell the Company's securities during the black-out period.

4. Disciplinary action will apply in case of breach of duty on the use of internal information for personal benefits. This may be done by issuance of warning letter, deduction of wage, temporary suspension of work without payment, or termination of employment, taking into account the intention and seriousness of such violation.

Shareholding Report of the Board of Directors and the Company's Management in 2022

(Inclusive of Spouse or Cohabiting couple, and Minor children)

Information as of 31 December 2022 :

Name - Surname Company's Directors	No. of Share (shares)		No. of Shares
	As of 31 Dec. 2021	As of 31 Dec. 2022	Addition (Reduction) During the Year
1. Ms. Jareeporn Jarukornsakul By Spouse or Cohabiting couple, and Minor children	73,836,600 -	73,836,600 -	- -
2. Mr. Weidt Nuchjalearn By Spouse or Cohabiting couple, and Minor children	- -	- -	- -
3. Mr. Ekajai Tivutanond By Spouse or Cohabiting couple, and Minor children	- -	- -	- -
4. Mrs. Punnee Worawuthichongsathit By Spouse or Cohabiting couple, and Minor children	- -	- -	- -
5. Mr. Numchai Lowattanakul By Spouse or Cohabiting couple, and Minor children	- -	- -	- -
6. Mr. David Richard Nardone By Spouse or Cohabiting couple, and Minor children	- -	- -	- -
7. Mr. Vivat Jiratikarnsakul By Spouse or Cohabiting couple, and Minor children	- -	- -	- -
8. Mr. Somkiat Masunthasuwun By Spouse or Cohabiting couple, and Minor children	- -	- -	- -
9. Mr. Pajongwit Pongsivapai By Spouse or Cohabiting couple, and Minor children	- -	589,000 -	- -
10. Mr. Krailuck Asawachatroj By Spouse or Cohabiting couple, and Minor children	- -	- -	- -

Remark : Mr. Pajongwit Pongsivapai becomes a member of the Board of Directors in 2022.

Name - Surname Company's Managements and Corporate Secretary	No. of Share (shares)		No. of Shares
	As of 31 Dec. 2021	As of 31 Dec. 2022	Addition (Reduction) During the Year
1. Mr. Somkiat Masunthasuwun Chief Executive Office By Spouse or Cohabiting couple, and Minor children	- -	- -	- -
2. Mr. Akarin Prathuangsit Chief Operating Officer By Spouse or Cohabiting couple, and Minor children	- -	- 2,600	- -
3. Mr. Praon Chinudomsut Chief Financial Officer By Spouse or Cohabiting couple, and Minor children	- -	- -	- -

Name - Surname Company's Managements and Corporate Secretary	No. of Share (shares)		No. of Shares
	As of 31 Dec. 2021	As of 31 Dec. 2022	Addition (Reduction) During the Year
4. Mr. Khamhoung Ratsamany Vice President - Utilities Operations By Spouse or Cohabiting couple, and Minor children	- -	- -	- -
5. Mr. Varanon Laosuwan Director - Utilities Business Development By Spouse or Cohabiting couple, and Minor children	- -	- -	- -
6. Mr. Punrapee Noparumpa Director - Power Business Development By Spouse or Cohabiting couple, and Minor children	- -	- -	- -
7. Mr. Sumet Tepkhom Director - International Power Business Development By Spouse or Cohabiting couple, and Minor children	- -	- -	- -
8. Mrs. Rattana Shinawatra Director - Accounting By Spouse or Cohabiting couple, and Minor children	- -	- -	- -
9. Ms. Nutchra Rattanajitbanjong Corporate Secretary By Spouse or Cohabiting couple, and Minor children	- -	- -	- -

Remark : Mr. Akarin Prathuangsit becomes a member of the Management in 2022.

(3) ANTI-CORRUPTION

The company determines in honest, transparent and just business practice according to good corporate principle. We are intolerant to both direct and indirect corruptions in any forms. The Company determines directors, executives and employees to seriously comply with the Anti-Corruption Policy. Therefore, the Company defines practical guidelines on anti-corruption and the communication channels for complaint which the Policy has been informed to all stakeholders of the company via communication channels including the Company's website, in-house board announcement, employee orientation, training/testing via E-learning, etc. The Policy will be annually reviews and can be used as guidance.

RISK ASSESSMENT AND MONITORING

The Risk Management Committee assessed the potential corruption risks by conducting the corruption risks meetings separate from other risks including monitoring, reviewing

and improving anti-corruption measures on a continued basis, with the assessment results being reported to the Board of Directors regularly, on a timely basis.

WHISTLE-BLOWING AND COMPLAINT-MAKING MEASURES

Stakeholders, employees, or external parties that come across or are aware of clues, as well as those affected by the Company and Subsidiaries' business or by the job performance of Directors, executives, and employees can file a complaint or whistle-blowing in the areas as followed :

- 1) Illegal deeds, corrupt practices, violations of the Company's regulations or the code of conduct by the Company's Directors, Executives, and employees.
- 2) Matters detrimental to the Company's interests or reputation.
- 3) Major flaws in financial reports and the internal control system.

ANTI-CORRUPTION IN ACTION AND INFORMATION DISCLOSURE ON ANTI-FRAUD AND ANTI-CORRUPTION IN 2022

- The Company announced on accepting and giving of articles, banquet fee or any other benefit (No Gift Policy) to all stakeholders, including its business partners, customers, the Company's subsidiaries for prevention involvement in fraud and corruption of business operation of the Company and its Subsidiaries.
- The Company required directors, managements, and employees to submit their annual conflict of interest reports.
- The Company required the employees on Anti-fraud and anti-corruption testing sessions were offered online.

(4) WHISTLE-BLOWING COMPLAINT CHANNELS :

The Company has the channels to inform, suggest or complain through the following channels :

- 1) E-mail to Audit committee
auditcommittee@wha-up.com
- 2) E-mail to Chief Executive Officer ceo@wha-up.com
- 3) The Company Website (Whistle-Blowing)
<https://www.wha-up.com/en/contact/whistle-blowing#contact-form>
- 4) Telephone/Fax.
02-719-9559/02-717-2128
- 5) Suggestion Box
Corporate Secretary Department

PROCEDURES UPON RECEIPT OF COMPLAINTS

- 1) The Chairman of Audit committee or Chief Executive Office appoints or authorizes a working group to personally find facts related to the violation or non-compliance with the code of conduct or policies.
- 2) The authorized working group processes and screens such facts and then considers proposing appropriate steps and actions for handling such complaints for those affected by such occurrence or disciplinary punishment for the offenders to the company's regulations.
- 3) The authorized working group proposes measures to deal with the violation or non-compliance with the

code of ethics or policies to the Chairman of Audit Committee or Chief Executive Officers' consideration so as to alleviate damage for those affected by such occurrence, taking the overall damage into account or disciplinary punishment for the offenders to the company's regulations.

- 4) The Chairman of Audit committee or the Chief Executive Officer reports to the Board of Directors for acknowledgment and reports on the results to the stakeholders who submitted such complaints, if the complainants can be identified.

PROTECTIVE MEASURES OF THE COMPLAINANTS OR THOSE WHO PROVIDE COOPERATION IN THE INVESTIGATION.

The complainants or those who provide cooperation in the investigation of facts may choose to keep their identities undisclosed, in case such disclosure may jeopardize their safety or cause any damage. In case their identities are disclosed, the Company will report on developments of the fact finding. The Company may not disclose name-surname, address, photograph, or any other information which may identify the complainants or those who provide cooperation in the investigation of facts. The person who accepts complaints must keep related information confidential and may disclose the same only to the extent necessary by taking into account safety and damage in respect of the complainants or those who provide cooperation in the investigation of facts, sources of information or related persons. If it is likely to cause damage or jeopardize safety, appropriate protection measures must be implemented. Those who sustain damage will be compensated by way of appropriate and fair procedures.

PENALTY

The Company shall establish appropriate punishment system on non-compliance and direct or indirect violating personnel against the Anti-Corruption Policy. Disciplinary punishment including redundant if deems necessary and legal procedure shall be considered.

In 2022, the Company has not received any complaints.

8.2 PERFORMANCE REPORT OF THE AUDIT COMMITTEE 2022

Dear Shareholders

The Audit Committee of WHA Utilities and Power Public Company Limited consists of three independent directors who are qualified, knowledgeable, proficient in accounting, finance, law, etc. Thus, qualified to perform duties in accordance with the requirements of the Securities and Exchange Commission (SEC) and the Stock Exchange of Thailand (SET).

The Audit Committee independently and objectively executes its duties as prescribed by the Audit Committee Charter and delegated by the Board of Directors, in accordance with all applicable SEC and SET requirements.

In 2022, the Audit Committee held 7 Audit Committee meetings where consultations were held with the management, internal auditor, and the external auditor in the relevant agenda. The attendance detailed are as follows :

Name List of the Audit Committee Member		No. of Meeting Attending/ Total of Meeting
Mr. Weidt Nuchjalearn	Chairman of the Audit Committee	7/7
Mr. Ekajai Tivutanond	Audit Committee member	7/7
Mrs. Punnee Worawuthichongsathit	Audit Committee member	7/7

THE PERFORMANCE OF THE AUDIT COMMITTEE CAN BE SUMMARIZED AS FOLLOWS :

- 1. Review of Financial Reports :** The Audit Committee reviewed material information of the quarterly financial statements and the financial statements for the year 2022, as well as connected transactions and transactions that may pose conflicts of interest among business groups. The Committee also reviewed significant issues and considered supplemental clarifications from the external auditors, management, and other relevant persons. The Audit Committee views that the financial statements were prepared in accordance with Thai Financial Reporting Standards (TFRS). The Audit Committee thus endorsed the financial report that the external auditors have reviewed and audited, which is an unqualified opinion report.

In addition, the Audit Committee held exclusive meetings with the external auditors without management in attendance to discuss independently obtaining information and cooperation from management or employees in the preparation of the financial statements and disclosures that meets the financial reporting standards, key audit matters, and independence in performance. The external auditor did not present any material observations nor find any suspicious circumstances.
- 2. Review of Internal Control System and Risk Management :** The Audit Committee reviewed the internal control system based on internal audit outsource and the Company's Internal Audit Department report to the Audit Committee on a quarterly basis, including assessment of the adequacy of internal control system based on the Internal Control Sufficiency Evaluation Form (evaluation form) according to The Securities and Exchange Commission (SEC), as prepared by internal auditor outsource. There were no significant issues or deficiencies discovered that could affect the Company's main objective. Thus, it is reasonable to ensure that the Company's internal control system is adequate and appropriate for its business operations and capable of supporting in achieving its established goals and objectives.

While conducting internal audits, the internal audit outsource and the Company's Internal Audit Department included fraud risk assessment in the review of internal control systems in various processes, as well as reporting the results to the Audit Committee. Internal auditors discovered no fraud risk issues, providing reasonable assurance of the efficacy of the Company's preventive measures for reducing the likelihood of fraud.

Additionally, the Audit Committee acknowledged corporate risk management report from the Risk Management Committee as presented to the Board of Directors' meeting. This ensures that the Company has effective risk management in place for key risks that could impact its operations, as well as accountable risk owners and mitigation measures that are suitable, adequate, and cover significant risks in both short term and long term.

3. **Governance of Internal Audit :** The Board of Directors has supervised internal audit activity to ensure its independence through direct reporting to the Audit Committee as specified in the Internal Audit Charter. The Audit Committee is responsible for reviewing the qualifications, expertise, and experience of internal auditor outsource and approving their appointment, as well as reviewing and approving the annual internal audit plan and long-term plans and the Internal Audit Charter. Also, Audit Committee Charter has been reviewed and endorsed to the Board of Directors for approval.
4. **Review of Compliance with the Securities and Exchange Acts, SEC & SET Regulations, and Laws Related to the Company's Business :** The Audit Committee has reviewed the Company's business operations for compliance with the regulations and laws related to the Company's business operations, through the internal audit reports of the internal audit function. They also strongly emphasized to the management to keep abreast of new laws that will become effective in the future and may affect the Company operations.
5. **Appointment of the external auditor and the Audit fee for the Year 2023 :** The Audit Committee considered the auditor's independence and performance in 2022, including the audit fee in the past period. The Audit Committee found that the auditor's performance was satisfactory.

The Audit Committee has resolution to endorse the appointment of Company's auditor to the Board of Directors which is to be proposed at the 2023 Annual General Meeting of Shareholders to consider and appoint Mr. Boonruang Lertwisetwit (CPA no. 6552) or Mr. Paiboon Tunkoon (CPA no. 4298) or Ms. Wanvimol Preechawat (CPA no. 9548) from

PricewaterhouseCoopers ABAS Limited (PWC) as the Company and its subsidiaries' External Auditor for the year 2023 as well as, to approve the audit fee of Baht 2,452,000 and other audit-related expenses as appropriated.

The external auditors who have been proposed for the appointment above have no family, financial interest, employment, or business relationship with the Company or any of its subsidiaries, other than in the normal course of audit business.

6. **Review of connected transactions or transactions that may cause conflicts of interest :** The Audit Committee has reviewed connected transactions or transactions that have or may have conflicts of interest with the Company. The transactions were of an opinion that the items mentioned were consistent with the connected transaction policy. These were normal business transactions that benefited the Company's business and were appropriately, completely, accurately, and timely disclosed.

In summary, the Audit Committee, while discharging its Chartered responsibilities as assigned by the Board of Directors with proficiency, independence, and a strong focus on the Company's financial and operational information review, found that the Company had presented its financial and operational information in a true and fair manner, maintained adequate and effective internal control, risk management, and fraud prevention, and complied with applicable laws, regulations and obligation, including correctly disclosing connected transactions. All actions demonstrate the Company's commitment to and adherence to corporate governance and sustainable development.



Mr. Weidt Nuchjalearn

Chairman of the Audit Committee

8.3 PERFORMANCE REPORT OF THE SUB COMMITTEES 2022

8.3.1 REPORT OF THE CORPORATE GOVERNANCE AND SUSTAINABLE DEVELOPMENT COMMITTEE

Dear Shareholders

The Board of Directors has assigned the Corporate Governance and Sustainable Development Committee to propose the CG guidelines and oversee the conduct of the directors and the management so as to ensure conformance to CG principles, SET's CG principles, IOD's recommendation from the Corporate Governance Assessment Report. The committee's mandate also includes formulating the frameworks for the Company's Anti-Corruption tasks. The current committee is made up of three knowledgeable directors, namely Mrs. Punnee Worawuthichongsathit, Mr. Ekajai Tivutanond, and Mr. Vivat Jiratikarnsakul.

In 2022, three meetings were held by the committee as planned as highlighted below :

1. Considered the results of corporate compliance with laws related to its company business.
2. Reviewed and revised the Corporate Governance Policy, Anti-Corruption Policy, Code of Conduct and the Corporate Governance Committee Charter.
3. Considered of Good Corporate Governance Principles for Listed Companies 2017 to be applied to companies including the change of CGR assessment criteria for the year 2023 by the Thai Institute of Directors Association (IOD).
4. Considered the submitting a Thailand Sustainability Investment (THSI) form for 2022.
5. Considered the Assessment results of AGM Checklist, CGR score, THSI, and SET Award 2022.

As the Company's commitment to running its business with CG, the company garnered the following domestic awards for CG and sustainability management :

- Excellent rating given by Thai Institute of Directors under its CGR Project among Thai listed companies for the fourth consecutive year
- The company was recertified as a certified company by Thailand's Private Sector Collective Action against Corruption (CAC) on 31 December 2022.
- The company was selected as Listed Company under Thailand Sustainability Investment in 2021 or "Sustainable stocks" allocated by Stock Exchange of Thailand, representing listed companies with outstanding environmental, social and governance performance as well as concern for stakeholders in both social and environmental aspects and sustainability management process, successfully passing selection for a fourth year



Mrs. Punnee Worawuthichongsathit
Chairman of the Corporate Governance and
Sustainable Development Committee

8.3.2 REPORT OF THE NOMINATION AND REMUNERATION COMMITTEE

Dear Shareholders

The Nomination and Remuneration Committee is made up of three knowledgeable directors, namely Ms. Weidt Nuchjalearn, Ms. Jareeporn Jarukornsakul, and Mr. Ekajai Tivutanond.

The Nomination and Remuneration Committee is responsible for nominating individuals whose qualifications meet the indicated criteria to be appointed as directors, Chief Executive Officer (CEO), and Board-Committee members. It also determines the forms and criteria for directors' remuneration before tabling to the Board for endorsement and to shareholders for approval respectively.

In 2022, four meetings were held by the committee with the highlights of performance are as follows :

1. Reviewed the 2022 performance assessment of the CEO, the findings of which were forwarded to the Board for consideration of salary adjustment and Bonus.
2. Nominated qualified candidates for directorship to be submitted to the Board for consideration and proposing to the AGM 2022 for appointment as directors succeeding those who had completed their terms.
3. Nominated qualified candidates for directorship to be submitted to the Board for consideration and proposing to the AGM 2022.

4. Nominated qualified candidates for serving on subcommittees by reviewing them against subcommittee composition, specifically expertise and appropriate skills for such service, before submitting them for the Board's appointment.
5. Reviewed and proposed Board remuneration for 2022.
6. Encouraged minor shareholders to propose agenda items and nominate directors for election by announcing to shareholders before the AGM 2022.
7. Nominated qualified candidates for appointment as CEO to replace who resigned to the Board of Directors for approval.
8. Nominated qualified candidates for appointment as COO to the Board of Directors for approval.
9. Reviewed the Nomination and Remuneration Committee Charter.
10. Considered the Succession Plan.



Mr. Weidt Nuchjalearn

Chairman of the Nomination and Remuneration
Committee

8.3.3 REPORT OF THE RISK MANAGEMENT COMMITTEE

Dear Shareholders

The Risk Management Committee is made up of three knowledgeable, competent, experienced members with mastery of the Company's business as its members, namely Ms. Jareeporn Jarukornsakul, Mr. David Richard Nardone, and Mr. Numchai Lowattanakul.

To achieve business goals while promoting confidence and credibility among investors and stakeholders, this year the Risk Management Committee operated with its best efforts to support the Board of Directors on the corporate risk management. The committee defined and reviewed the corporate risk management scope, policy, and processes as prescribed in the Risk Management Committee Charter, providing recommendations on suitable approaches for efficient business conduct in line with strategic directions and business plans.

In 2022, meeting 4 times, this committee continued to value the steering of corporate risk management to support management's operation with maximum efficiency by screening all issues with potentially significant impacts on the Company. All members attended these meetings, as highlighted below :

1. Considered the progress report of the Company's Risk.
2. Considered the Company's Risk and mitigation plan for 2022.
3. Monitored, assessed, and advised various investment projects such as SDWTP in Vietnam to ensure that the Company's business commands efficiency under its risk appetite as well as concrete, practical mitigation plans.

4. Reviewed the Risk Management Committee Charter.
5. Reviewed and revised the Risk Management Policy.
6. Approved a change of the Risk Management Working Committee.

This year, the Risk Management Committee found that the Company has developed its corporate risk management system to embrace all aspects of risks, and commanded continual risk management practices in line with prevailing circumstances. The committee held meeting to promptly review key and urgent risks, rendering the Company's risk management effective. In conclusion, the Company commanded key corporate risk management practices that has been proved efficient, suitable, and manageable within the indicated risk tolerance.



Miss Jareeporn Jarukornsakul

Chairman of the Risk Management Committee

8.3.4 REPORT OF THE EXECUTIVE COMMITTEE

Dear Shareholders

The Executive Committee is made up of eight knowledgeable, competent, experienced members with mastery of the Company's business as its members, namely Ms. Jareeporn Jarukornsakul, Mr. David Richard Nardone, Mr. Vivat Jiratikarnsakul, Mr. Pajongwit Pongsivapai, Mr. Somkiat Masunthasuwun, Mr. Natthapatt Tanboon-ek, Mr. Akarin Prathuangsit, and Mr. Prapon Chinudomsab.

The Executive Committee operated with its best efforts to support the Board of Directors with respect to the policies and plans of the Company, including monitoring that management implements the Company's approved policies and strategic plans with responsibility, care and honesty, including in compliance with laws, objectives and articles of association of the Company, and the resolution of the Board of Directors and shareholders' meeting.

In 2022, 9 meetings were held by the committee with the highlights of performance are as follows :

1. Considered and approved the formulation of strategic plans and business plans, including both investment and financial goals, annual budgets for the Company and its subsidiaries, and recommending them to the Board of Directors for consideration and approval, as well as monitoring to ensure that management implements the plans and strategies appropriately and in accordance with the goals and plans set;
2. Considered and monitored the performance of the Company and its subsidiaries and provide solutions and recommendations that are consistent with the strategic plan and business plan, including any goals assigned by the Board of Directors;
3. Considered, examined and screened important matters, such as the Company's and subsidiaries' investment, entering into transactions with units engaged in business activities, etc., before recommending to the Board of Directors for consideration, acknowledgment, or approval;
4. Considered and approved various transactions within the delegation of authority assigned by the Board of Directors and report to the Board of Directors for acknowledgment; and
5. Supervised the Company's management policies, as well as an executive succession plan, including manpower plans and evaluation criteria for executive performance.



Miss Jareeporn Jarukornsakul

Chairman of the Risk Management Committee



INTERNAL CONTROL AND RELATED TRANSACTIONS

9.1 INTERNAL CONTROL

The Company places importance on good internal control system and corporate governance in its business operations, which includes implementing an operating system that is transparent, fair, and reliable with checks and balances, ultimately benefiting shareholders, employees, business partners, communities, and other stakeholders. The Board of Directors appointed the Audit Committee consisting of three members at its meeting No.6/2015 on 19 November 2015 to review the Company's internal control system and internal auditing to ensure they are adequate, sufficient, and efficient, as well as to ensure compliance with applicable laws and regulations issued by the Securities and Exchange Commission (SEC) and the Stock Exchange of Thailand (SET), including all other applicable laws relating to the Company's business.

During the Board of Directors' meeting No.1/2023 on 23 February 2023, which was attended by all 3 members of the Audit Committee. The Audit committee reported to the Board of Directors regarding the Company's assessment of the adequacy of internal control system based on the Internal Control Sufficiency Evaluation Form (evaluation form) following Securities and Exchange Commission (SEC) guidelines. The evaluation form was prepared by KPMG Phoomchai Business Advisory Ltd., an internal audit outsources, and has been reviewed by the Audit Committee. The Board viewed that the internal control systems in place at the Company and its subsidiaries are adequate and appropriate. The Company and its subsidiaries have sufficient personnel to operate the system efficiently, which includes monitoring and supervising the Company's and subsidiaries' operations to safeguard the Company's and subsidiaries' assets from misuse or unauthorized use by directors or executives, as

well as conducting business with persons who may have conflicts of interest and connected parties.

The Company's internal control sufficiency evaluation can be summarized in 5 aspects. The details are as follows :

1. CONTROL ENVIRONMENT

The Board of Directors and executives uphold the values of integrity and ethics while maintaining the business environment that facilitate the internal control system to operate as intended.

The Company has established a corporate governance policy to serve as a guideline for its personnel, including the Board of Directors, executives, and employees, to ensure that the Company operates transparently, verifiably, and in the best interests of all stakeholders. Moreover, the Company has developed a Code of Conduct to serve as a guideline for management and operation of the Company with integrity and ethics and to encourage its personnel to perform their duties and make decisions on various matters with ethics and integrity, as well as establishing an anti-corruption policy that prohibits its personnel from engaging in any form of corruption, including giving or receiving bribes.

The Company has defined the scope, authority, duties, and responsibilities of the Board of Directors and subcommittees in writing, clearly separating duties and defining the Company's work procedures in accordance with the principle of three lines of defense to achieve a balance of power between them, including appropriately delegating authority in accordance with the organizational structure.

2. RISK ASSESSMENT

The Company is aware of various risks that may arise under the changing in internal and external factors, including the diverse contexts in which business operations take place. By integrating risk management into the company's policies, rules, and regulations, the Company has implemented risk management throughout the organization in accordance with the COSO Enterprise Risk Management Framework (COSO ERM) principles. It covers corporate governance, risk management and internal control, and compliance.

The Board of Directors and executives give priority to risk management. Therefore, the Risk Management Committee (RMC) has been formed to be responsible for formulating risk management policy that covers the entire organization, as well as supervise the establishment of a risk management system or process to appropriately reduce the impact on the Company's business. In addition, a Risk Management Working Group has been established to analyze, assess, and formulate a plan to manage potential risks.

The Company's risk assessment considers changes in factors affecting current and future business operations, emerging risk, and risks related to corruption. As a result, the Company develops a risk management guideline to ensure that risks are managed to an acceptable level. Risk assessment and monitoring of risk management procedures are carried out on a regular basis by the Company. The Key Risk Indicator (KRI) is used to monitor changes in various risk factors to develop further measurements in response. Additionally, the Company conducts a business continuity plan rehearsal each year to prepare for and mitigate the effects of an event that potentially disrupts or threatens the continuity of the Company's operations, as well as to reflect the results of the rehearsal to improve the plan's response to similar incidents.

3. CONTROL ACTIVITIES

The Company designs internal controls that cover the organizational, business unit, department, and process levels to help minimize the risk of not achieving its objectives to an acceptable level. Important policies and procedures have been established, as well as the segregation of duties, scope, and authority, as well as internal power of authorities, which clearly demonstrates the approval authority of executives at each level in a concise and appropriate manner.

The Company defines information technology security policy based on internationally standardized frameworks and practices. The information technology policy, as well as cybersecurity policy, are reviewed and updated on a regular basis to cover important activities.

The Company is aware of the cybersecurity risks of information systems and attaches great importance to cyber threat protection. Therefore, additional software is installed to support cybersecurity improvements, such as MFA (Multi-Factor Authentication) for Office 365 access, Zero Trust secure access system. Moreover, the Company has established a data loss prevention policy, Data Loss Prevention (DLP) of important information, perform risk assessment and system vulnerabilities by penetration test technique and simulating phishing email (Phishing Test) by external experts to measure the risk level of company, etc., including organizing training for employees throughout the organization on the topic of "Cybersecurity Awareness Training" to continuously improve the security standards of the organization's information technology in response to changing circumstances.

4. INFORMATION & COMMUNICATION

The Company recognizes the importance of receiving quality and relevant information to ensure that the Board of Directors, executives, and stakeholders obtain adequate important information to support effective decision making on important matters related to the Company.

The Company establishes appropriate communication channels for each type of internal information, including providing important information to new employees during orientation, communicating company goals and objectives from management via Town hall activities, communicating via electronic mail, and utilizing information technology systems to enable directors, executives, and employees to manage, store and share information securely with others. To manage information, the Company establishes the Corporate Document Management Process, which includes defining the information classification, permission and confidentiality of documents, setting standards for storing the important documents, control documents, internal and external operational data. Additionally, the Company implements information security technologies such as secure document opening and encryption for Microsoft Office 365 to ensure that key and pertinent information to the business's operations remains secure, precise, comprehensive, adequate, and timely.

To communicate with stakeholders outside the organization, the Company established a communication process and effectively disclosed financial and non-financial information through appropriate communication channels, including a whistle-blowing channel through which stakeholders can safely share information with the Company.

5. MONITORING ACTIVITIES

The Company assesses the sufficiency of its internal control system according to the SEC's assessment form by internal auditor outsource annually. Additionally, the Company's internal control system is monitored and evaluated for appropriateness, including compliance with prescribed internal controls.

The internal audit outsource and the Company's Internal Audit Department performs audits in line with the risk-based internal audit plan approved by the Audit Committee and report the results to the Audit Committee on a quarterly basis.

According to the audit findings in 2022, no significant deficiencies were discovered in the Company's internal control system. The Internal Audit Department and internal audit outsource have followed up on the implementation of audit recommendations in response to the audit issues. In addition, the Company's external auditor reported that there were no material weaknesses affecting the Company's financial statements.

HEAD OF INTERNAL AUDIT

KPMG Phoomchai Business Advisory Ltd. ("KPMG") was designated as the Company's internal auditor for the fiscal year 2022 in the Audit Committee Meeting No. 1/2022, dated 18 February 2022. KPMG has appointed Mr. Supachate Kunaluckkul, Partner of Business Consulting, to perform as the Company's internal auditor for the year 2022.

After considering their qualifications, the Audit Committee is of an opinion that KPMG and Mr. Supachate Kunaluckkul are qualified to perform such duties due to their independence, experience in internal audit, and understanding of the Company's activities and operations. Additionally, the Company established an internal audit department to coordinate with internal auditor outsource.

The appointment, removal, and transfer of the person holding the position of the head of the Company's internal audit must be approved by the Audit Committee. The qualifications of the person holding the position of head of the internal audit appear in Attachment 3.

9.2 RELATED PARTY TRANSACTIONS

9.2.1 PERSONS WITH A POSSIBLE CONFLICT OF INTEREST AND NATURE OF RELATIONSHIP

The Company and its Subsidiaries have entered into transactions with persons who may have conflicts of interest, which can be summarized as follows :

Persons who may have conflicts	Nature of Business	Nature of Relationship
WHA Industrial Development Public Company Limited ("WHAID")	- Real estate business development and industrial estate management	- It is a major shareholder of the Company holding 70.45% of paid-up capital. (Both direct and indirect) - There are 3 common directors : 1) Ms. Jareeporn Jarukornsakul 2) Mr. David Richard Nardone 3) Mr. Vivat Jiratikarnsakul
Eastern Seaboard Industrial Estate (Rayong) Company Limited ("ESIE")	- Real estate business development and industrial estate management	- A subsidiary of WHAID, which is the Company's major shareholder holding 60% of the paid-up capital. (Both direct and indirect) - There are 4 common directors : 1) Ms. Jareeporn Jarukornsakul 2) Mr. David Richard Nardone 3) Mr. Vivat Jiratikarnsakul 4) Mr. Krailuck Asawachatroj
WHA Eastern Industrial Estate Co., Ltd. ("WHA EIE")	- Real estate business development and industrial estate management	- A subsidiary of WHAID, which is the Company's major shareholder, holding 99.99% of the paid-up capital. (Both direct and indirect)
WHA Eastern Seaboard Industrial Estate Co., Ltd. ("WHA ESIE")	- Real estate business development and industrial estate management	- There are 4 common directors : 1) Ms. Jareeporn Jarukornsakul 2) Mr. David Richard Nardone 3) Mr. Vivat Jiratikarnsakul 4) Mr. Krailuck Asawachatroj
WHA Rayong Industrial Land Co., Ltd. ("WHA RIL")	- Real estate development and management of industrial zone projects	
WHA Saraburi Industrial Land Co., Ltd. ("WHA SIL")	- Real estate development and management of industrial zone projects	
WHA Eastern Seaboard Industrial Estate 4 Co., Ltd. ("WHA ESIE4")	- Real estate business development and industrial estate management	
WHA Industrial Development Engineering Co., Ltd. ("WHA IDE")	- Design and construction services	- A subsidiary of WHAID, which is the Company's major shareholder, holding 99.99% of the paid-up capital. (Both direct and indirect) - There are 3 common directors : 1) Ms. Jareeporn Jarukornsakul 2) Mr. David Richard Nardone 3) Mr. Krailuck Asawachatroj

Persons who may have conflicts	Nature of Business	Nature of Relationship
WHA Industrial Building Co., Ltd. ("WHA IB")	- Logistics business, selling and renting factory buildings, and finished warehouses	- A subsidiary of WHAID, which is the Company's major shareholder, holding 99.99% of the paid-up capital. (Both direct and indirect) - There are 2 common directors : 1) Mr. David Richard Nardone 2) Mr. Vivat Jiratikarnsakul
WHA Eastern Pipeline Services Co., Ltd. ("WHA EPS")	- Pipe rack rental services	- A subsidiary of WHAID, which is the Company's major shareholder, holding 99.99% of the paid-up capital. (Both direct and indirect) - There are 4 common directors : 1) Ms. Jareeporn Jarukornsakul 2) Mr. David Richard Nardone 3) Mr. Vivat Jiratikarnsakul 4) Mr. Krailuck Asawachatroj
WHA Corporation Public Company Limited ("WHA")	- Logistics business, selling and renting factory buildings, warehouses and other properties	- A parent company of WHAID, which is the WHAID's major shareholder, holding 98.54% of the paid-up capital. (Both direct and indirect) - There are 3 common directors : 1) Ms. Jareeporn Jarukornsakul 2) Mr. David Richard Nardone 3) Mr. Vivat Jiratikarnsakul
WHA Connect Co., Ltd. ("WHA CN")	- Digital services, data center, Internet connection and other IT services	- A subsidiary of WHAID, which is the Company's major shareholder, holding 99.99% of the paid-up capital. (Both direct and indirect) - There are 2 common directors : 1) Ms. Jareeporn Jarukornsakul 2) Mr. Pajongwit Pongsivapai

9.2.2 TRANSACTIONS BETWEEN THE COMPANY AND ITS SUBSIDIARIES WITH PERSONS WHO MAY HAVE CONFLICT OF INTEREST

Transactions between 2021 and 2022 can be summarized as follows :

1) SALE WATER AND WATER MANAGEMENT SERVICES

Items	Transaction Amount (Million Baht)		Description	Opinion of the Audit Committee
	Financial year 31 December 2021	Financial year 31 December 2022		
Revenue from sale water			The company has entered into a raw water distribution contract with WHA IB, starting from 1 January 2022 onwards. Prices and terms in the contract are considered as normal business practice.	The Audit Committee considered and opined that such transactions are necessary and reasonable, which is a normal business transaction with general trading conditions.
• WHA IB	-	0.31		
Account receivable and accrued income				
• WHA IB	-	0.02		
Revenue from management fee			The Company has entered into an agreement to manage the water business by providing wastewater treatment services to ESIE and providing industrial water and wastewater treatment services to WHA IB (For water services in WHALP1, WHALP4). The agreement is valid for 3 years and effective from 30 March 2016 and has been extended to expire on 31 December 2024. The Company charged the average of direct expenses plus a margin which is comparable to the same service provider.	The Audit Committee considered and opined that such transactions are necessary and reasonable, which is a normal business transactions on with general trading conditions and the management rate can be compared with other companies providing the same services.
• ESIE	4.03	4.23		
• WHA IB	0.61	0.64		
Account receivable and accrued income				
• ESIE	0.70	4.50		
• WHA IB	0.11	0.68		

2) RENTAL SERVICES

Items	Transaction Amount (Million Baht)		Description	Opinion of the Audit Committee
	Financial year 31 December 2021	Financial year 31 December 2022		
Revenue from Rental fee			The Company's subsidiary has entered into a contract with WHA, WHA ESIE4, ESIE, WHA CN to lease solar rooftop equipment and providing maintenance services. The contract is valid for 15 years/20 years	The Audit Committee considered and opined that such transactions are necessary and reasonable, which is a normal business transactions on with general trading conditions and the lease rate can be compared with other companies providing the same services.
• WHA	4.31	4.89		
• WHA ESIE4	0.10	0.10		
• ESIE	1.17	1.17		
• WHA CN	0.87	0.45		
Accrued income				
• WHA	0.67	0.90		
• WHA ESIE4	-	-		
• ESIE	-	-		
• WHA CN	0.22	-		

3) RAW WATER PROCUREMENT

3.1 RAW WATER PROCUREMENT IN ESIE

Items	Transaction Amount (Million Baht)		Description	Opinion of the Audit Committee
	Financial year 31 December 2021	Financial year 31 December 2022		
Raw water cost			<ul style="list-style-type: none"> In 2008, the Company entered into a contract to purchase raw water from ESIE under a lease agreement for the production and distribution of industrial water. The contract period is 25 years. The Company agreed to purchase raw water at the rate of raw water cost defined by the lessor plus a margin of 15%. The cost of repairs and maintenance is the responsibility of the lessor. However, the Company is in the process of negotiating to purchase additional raw water from other parties 	The Audit Committee considered and opined that such transaction is necessary and reasonable and beneficial to the Company's business. It is normal business transaction with general trading conditions. Raw water is the main raw material to produce industrial water and both the Company and WHA ID Group will benefit from the supply of such raw water.
• ESIE	82.13	87.40		
Accounts payable and accrued expenses				
• ESIE	10.04	14.50		

3.2 PURCHASE OF RAW WATER IN INDUSTRIAL ESTATES AND OTHER INDUSTRIAL ZONES

Items	Transaction Amount (Million Baht)		Description	Opinion of the Audit Committee
	Financial year 31 December 2021	Financial year 31 December 2022		
Raw water cost			The Company entered into the raw water purchasing contract with WHA ID, WHA EIE WHA ESIE, WHA RIL, WHA SIL, WHA ESIE 4 with the term for 50 years, in accordance with the terms of the Lease Agreement for the production and distribution of industrial water and the management of wastewater to supply raw water to customers in the industrial estates.	The Audit Committee considered and opined that such transaction is necessary and reasonable and beneficial to the Company's business. It is normal business transaction with general trading conditions. Raw water is the main raw material to produce industrial water and both the Company and WHA ID Group will benefit from the supply of such raw water.
• WHA ID	59.48	14.24		
• WHA EIE	439.49	-		
• WHA ESIE	129.16	18.49		
• WHA RIL	43.11	19.58		
• WHA SIL	0.11	0.11		
• WHA ESIE 4	2.70	-		
Accounts payable and accrued expenses				
• WHA ID	5.11	0.85		
• WHA EIE	50.24	-		
• WHA ESIE	13.04	1.35		
• WHA RIL	4.96	0.96		
• WHA ESIE 4	0.38	-		

4) LEASE OF LAND AND PIPE RACK FOR BUSINESS PURPOSES

Items	Transaction Amount (Million Baht)		Description	Opinion of the Audit Committee
	Financial year 31 December 2021	Financial year 31 December 2022		
Land rental				
• WHA ID	2.58	2.64	The Company and WHA Water Co., Ltd., a Company's subsidiary, have entered into a land rental agreement with WHA ID, WHA ESIE, WHA EIE, WHA ESIE 4 and WHA RY36 to use in the industrial water production business. The rental rate per rai per year is comparable with the market price. Each rental agreement is 30 years, with WHA ID WHA ESIE and WHA EIE commencing from March 30, 2016 to March 29, 2589. WHA ESIE 4 commenced from May 1, 2017 to April 30, 2047, and is renewable for another 20 years and The rental agreement of WHA RY36 is 25 years from January 1, 2022 to December 31, 2046	The Audit Committee considered and opined that such transactions were necessary and reasonable for the operation of the business of the Company. The rental rate is the rate that other industrial estates charge to the general customers.
• WHA EIE	1.56	1.61		
• WHA ESIE	3.93	4.51		
• WHA ESIE 4	1.64	1.75		
• WHA RY36	-	5.09		
Accounts payable and accrued expenses				
• WHA ID	-	-	On September 30, 2021, WHA Water CO., Ltd. Entered into land rental agreement in WHA ESIE3 Industrial Estate from WHAESIE for a period of 30 years starting from April 1, 2021 to March 31, 2051 and is renewable for another 18 years 11 months. The rental rate per rai per year is comparable with the market price,	
• WHA EIE	-	-		
• WHA ESIE	-	-		
• WHA ESIE 4	-	-		
• WHA RY36	-	0.38		
Pipe rack rental				
• WHA EPS	1.91	7.36	WHA Water Co., Ltd., a Company's subsidiary, have entered into a pipe rack rental agreement with WHA EPS to use in the industrial water production business. The rental rate per rai per year is comparable with the market price. The rental agreement is 15 years, starting from October 1, 2019 to September 30, 2034 and another contract starting from January 2021 to December 31, 2035.	The Audit Committee considered and opined that such transactions were necessary and reasonable for the operation of the business of the Company. The rental rate is the rate that other industrial estates charge to the general customers.
			The Company have entered into a pipe rack rental agreement with WHA EPS to use in the industrial water production business. The rental rate per rai per year is comparable with the market price. The rental agreement is 15 years, starting from January 1, 2022 to December 31, 2036	

5) MANAGEMENT EXPENSES

Items	Transaction Amount (Million Baht)		Description	Opinion of the Audit Committee
	Financial year 31 December 2021	Financial year 31 December 2022		
Management expenses			<ul style="list-style-type: none"> The Company entered into the Management Contract with WHA ID to provide corporate marketing services, corporate strategy, finance, accounting, legal, information technology and productive supervision, repair and maintenance. The agreement is valid for 1 year from January 1, 2022 to December 31, 2022. The management fee is calculated based on the costs related with the business plus a margin which can be compared to other companies' in the same business. 	<p>The Audit Committee considered and opined that the transaction is necessary and reasonable. The scope of services under the management agreement is consistent with the organizational structure and the new management policy of the Company. In addition, the management fee in such contract is a reasonable rate.</p>
• WHA ID	41.52	27.89		
• WHA	1.37	13.93		
• WHA IDE	4.91	5.42		
Accounts payable and accrued expenses			<ul style="list-style-type: none"> The Company entered into the Management Contract with WHA to provide legal, administrative and human resource advisory services. The agreement is valid for 1 year from January 1, 2022 to December 31, 2022. The management fee is calculated based on the costs related with the business plus a margin which can be compared to other companies' in the same business. The Company entered into an agreement with the WHA for secretarial of the audit committee and coordinate with internal auditors. The agreement is valid for 6 months from July 1, 2022 to December 31, 2022. The management fee is calculated based on the costs related with the business plus a margin which can be compared to other companies' in the same business. 	
• WHA ID	41.52	29.68		
Trade accounts payable			<p>The Company contracted WHA IDE to manage and supervise the construction for each water system in each project because WHA IDE has experience in engineering in industrial estates. The Company entered into such contract on January 1, 2021 and would expire on December 31, 2022.</p> <p>The service tariff is calculated from the related costs plus the margin that can be comparable to those of the same business.</p>	<p>Such transactions are considered as necessary and beneficial to the Company since the Company has expanded its business and the industrial water system has to be installed for production and services. Therefore, it is necessary to hire experienced engineers to design and supervise the construction work. The Audit Committee considered and opined that such transaction is necessary and reasonable and is beneficial to the business operation.</p>
• WHA IDE	0.87	0.66		

6) RENTING THE RIGHT TO PRODUCE AND DISTRIBUTE INDUSTRIAL WATER WITH ESIE

Items	Transaction Amount (Million Baht)		Description	Opinion of the Audit Committee
	Financial year 31 December 2021	Financial year 31 December 2022		
Royalties for production and distribution - Amortization				
• ESIE	8.69	8.69	In 2008, the Company entered into a lease agreement for the rights to produce and distribute industrial water with ESIE for a period of 25 years to provide industrial water services to the operators in the industrial estate and will gradually amortize over the contract period.	The Committee considered that this transaction occurred before the appointment of the Audit Committee. In addition, ESIE is a joint venture between WHA ID and other entities. The Audit Committee considered and opined that such transaction is necessary and reasonable and is beneficial to the business operation.

7) RENTING THE RIGHT TO PRODUCE AND DISTRIBUTE INDUSTRIAL WATER

Items	Transaction Amount (Million Baht)		Description	Opinion of the Audit Committee
	Financial year 31 December 2021	Financial year 31 December 2022		
Annual royalties				
• WHA ID	4.05	4.15	• The annual royalties fee is an agreement under the lease agreement for the right to operate and distribute industrial water and waste water management. The Company entered into a contract with WHA ID Group with the annual royalties fee from the water business is comparable to other businesses in the market.	The Audit Committee considered and opined that such transaction is necessary and reasonable. The rate of the royalties' fee of the new contract is comparable to other businesses in the market. Such remuneration represents a percentage of revenue from the operation of the water business in the project is reasonable since the variation is in line with actual revenue and arising from business restructuring.
• WHA EIE	11.51	11.02		
• WHA ESIE	6.92	9.15		
• WHA RIL	3.04	2.96		
• WHA SIL	4.59	3.95		
• WHA ESIE 4	0.21	2.64		
• WHA RY36	-	0.25		
Accounts payable and accrued expenses				
• WHA ID	0.40	0.71		
• WHA EIE	1.90	1.57		
• WHA ESIE	1.26	1.75		
• WHA RIL	0.21	0.48		
• WHA SIL	0.71	0.65		
• WHA ESIE 4	0.02	0.05		
• WHA RY36	-	0.26		

8) OFFICE RENTAL

Items	Transaction Amount (Million Baht)		Description	Opinion of the Audit Committee
	Financial year 31 December 2021	Financial year 31 December 2022		
Office rental and service fees			The Company entered into a rental and service agreement with WHA for use as a head office. The contract is valid for 3 years, starting from February 1, 2021, until January 31, 2024	The Audit Committee considered and was of the opinion that the transaction was necessary and reasonable. and is in order to operate the company's business The rental and service rates are the rental rates that WHA charges general customers.
• WHA	9.18	10.01		
Accounts payable and accrued expenses				
• WHA	-	-		



9.2.3 APPROVAL MEASURES AND PROCEDURES FOR CONNECTED TRANSACTIONS

If the Company engages in a connected transaction with a person who may have a conflict of interest, the Audit Committee will offer an opinion on the transaction's necessity. The terms and conditions of such transaction must be consistent with market pricing, and the price at which such transaction proceeds must be evaluable and comparable to market values. If no comparable price exists, the price for entering into the transaction must be reasonable and in the best interests of the Company and its shareholders. If the Audit Committee lacks the expertise to examine prospective connected transactions, the Company will engage an independent specialist to provide opinions on the prospective connected transactions for consideration by the Board of Directors, the Audit Committee, or shareholders, as the case may be. Directors with an interest in such transactions will be prohibited from voting on them. Additionally, connected transactions will be disclosed in the Company's auditors' notes to the financial statements and annual report.

9.2.4 POLICY FOR FUTURE CONNECTED TRANSACTIONS

In the case of entering into related transactions in the future, the Company will comply with the Securities and Exchange Act B.E. 2535 (including any amendments), regulations, notifications, orders or requirements of the Capital Market Supervisory Board. Securities and Exchange Commission and the Stock Exchange of Thailand, as well as in accordance with the generally accepted accounting principles of Thailand regarding disclosure of personal information or related activities prescribed by the Federation of Accounting Professions of Thailand and the Company's regulations.

In the case of a normal transaction that will continue in the future, the Company has established criteria and guidelines for practice that are consistent with the general trading by referencing fair and reasonable pricing that can be verified. The Company will adhere to the general principles of trade agreements, as well as make recommendations to the Audit Committee for consideration and approval in accordance with the principles governing the Company's general trading conditions and guidelines governing such actions.

If a connected transaction occurs, the Company will arrange for the Audit Committee meeting to render an opinion on the transaction's appropriateness. If the Audit Committee lacks expertise in considering connected transactions, the Company will engage specialists, such as independent asset appraisers to provide opinions on related transactions. The Audit Committee's or a specialist's opinion will be incorporated into the Board of Directors' or shareholders' decision, as the case may be, to ensure that entering into such transaction does not result in a transfer of property or benefits between the companies or its shareholders, but rather is a transaction that considers the interests of all shareholders.

Additionally, if there is a transaction with or a change in the terms and conditions of transactions with the parent company, directors, executives, or persons related to the Company who have interests will abstain from attending the Board of Directors' meeting on the agenda regarding the consideration of such transaction.



FINANCIAL STATEMENTS





REPORT ON RESPONSIBILITIES OF THE BOARD OF DIRECTORS TOWARDS THE FINANCIAL REPORT OF THE YEAR 2022

The Board of Directors of WHA Utilities and Power Public Company Limited realizes its role and responsibility as the Directors in supervising the Company to have the Financial Reports of year 2022 to present sufficient in materiality, relevant and transparent financial and accounting information. Appropriate accounting policies have been put in place and adhered to on a consistent basis according to the generally accepted accounting principle while due consideration has been placed on the process of preparing the Company's and the Consolidated fiscal year 2022 financial statements including other information that have been included in the annual report of this year. The Audit Committee, who is appointed by the Company's Board of Directors, comprising of independent directors fully qualified in accordance with the requirement of the Stock Exchange of Thailand have reviewed and ensure accuracy and sufficiency of the financial report including accurate

and complete disclosure of connected transactions or transactions with possible conflict of interests, sufficient and effective internal control and internal audit system, risk management and appropriate corporate governance and to be compliance with the requirement of the Stock Exchange of Thailand and relevant rules and regulations.

The Company's Board of Directors has the opinion that the financial statements and financial reports for the year 2022 of the Company and the Subsidiaries, which have been reviewed by the Audit Committee in conjunction with the management, and audited by the Company's auditors, reflect accurate financial position, operational results and cash flow status in accordance with consistent appropriate accounting policies generally accepted accounting standards and according to relevant rules and regulations.

(Ms. Jareeporn Jarukornsakul)
Chairman of the Board of Directors



INDEPENDENT AUDITOR'S REPORT

TO THE SHAREHOLDERS AND THE BOARD OF DIRECTORS OF WHA UTILITIES AND POWER PUBLIC COMPANY LIMITED

My opinion

In my opinion, the consolidated financial statements and the separate financial statements present fairly, in all material respects, the consolidated financial position of WHA Utilities and Power Public Company Limited (the Company) and its subsidiaries (the Group) and the separate financial position of the Company as at 31 December 2022, and its consolidated and separate financial performance and its consolidated and separate cash flows for the year then ended in accordance with Thai Financial Reporting Standards (TFRS).

What I have audited

The consolidated financial statements and the separate financial statements comprise:

- the consolidated and separate statements of financial position as at 31 December 2022;
- the consolidated and separate statements of comprehensive income for the year then ended;
- the consolidated and separate statements of changes in equity for the year then ended;
- the consolidated and separate statements of cash flows for the year then ended; and
- the notes to the consolidated and separate financial statements, which include significant accounting policies and other explanatory information.

Basis for opinion

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

Key audit matters

Key audit matters are those matters that, in my professional judgement, were of most significance in my audit of the consolidated and separate financial statements of the current period. These matters were addressed in the context of my audit of the consolidated and separate financial statements as a whole, and in forming my opinion thereon, and I do not provide a separate opinion on these matters.

Key audit matters	How my audit addressed the key audit matters
<p>Goodwill impairment assessment</p> <p>Refer to Note 6 'Critical accounting estimates and judgements' and Note 15 'Goodwill' to the financial statements. As at 31 December 2022, the Group had goodwill of Baht 2,773 million represented 10% of total consolidated assets of the Group.</p> <p>The Group's goodwill arose from past acquisitions of power and water businesses. The Group is required to test for goodwill impairment annually in accordance with the requirements of the Thai Financial Reporting Standards.</p> <p>I focussed on the goodwill impairment assessment because the goodwill balance is material to the financial statements. The Group's management uses its judgement and future projections to determine the recoverable amount of cash-generating units, which includes goodwill.</p> <p>The recoverable amount is based on the fair value less costs of disposal determined using the present value method. The key assumptions used to estimate the future net cash flow discounted to net present value are growth rate and discount rate.</p> <p>From the impairment assessment this year, the Group's management concluded that there was no impairment of goodwill because the recoverable amount was higher than the carrying amount.</p>	<p>My audit procedures included:</p> <ul style="list-style-type: none"> understood and assessed how the Group's management forecasted future cash flow. compared cash flow projections with approved budgets and business plans set by the Group's management, and reviewed other supporting evidence from the management on future operation plans. challenged the reasonableness of management's key assumptions used in cash flow projections, such as its future business plans, growth rate and discount rate using the weighted average cost of capital method (WACC), and taking into account the sensitivity of these assumptions with regards to the recoverable amount, and tested the mathematical accuracy of estimated key figures based on the above assumptions and used them to calculate the recoverable amount, then compared it with the carrying value. <p>Based on these audit procedures, I found that the goodwill impairment assessment was reasonable and consistent with the supporting evidences.</p>

Key audit matters	How my audit addressed the key audit matters
<p><i>Impairment assessment of investments in the associate</i></p> <p>Refer to Note 6 ‘Critical accounting estimates and judgements’ and Note 11 ‘Interests in associates and joint ventures’ to the financial statements.</p> <p>The management tested the impairment of investments in the associate whenever there is any indicator that asset may be impaired and calculates their recoverable amounts by applying the fair value less costs of disposal models. These models involve management’s significant judgements in determining the assumptions applied, which are the estimated water selling price per cubic metre, estimated sale volume, operating expenditures, capital structure, growth rates and discount rate that reflect risk of water business and country risk premium.</p> <p>The management considered the following factors to assess whether there were any impairment indicators:</p> <ul style="list-style-type: none"> • accumulated operation losses and • the carrying value of investment recognised at cost in the subsidiary’s financial statement was higher than its net equity value at the consolidated level include goodwill as part of investment. <p>I focused on the impairment assessment of the investments in the associate due to the risks from external factors of investments in other country, its significant values, the various assumptions applied for the calculation of the recoverable amounts and management’s significant judgements involved in determining the appropriate level of impairment to be recorded.</p>	<p>My audit procedures included:</p> <ul style="list-style-type: none"> • understood how management determine the impairment indicators and assessed the method that the management used to forecast the expected future cash flow. • compared cash flow projections with approved budgets set by the associate’s management, and reviewed other supporting evidence from the management on future operation plans. • challenged management’s significant assumptions used in the impairment testing of the investments in the associate, especially the estimated water selling price per cubic metre, estimated sale volume, operating expenditures, capital structure, growth rates and discount rate that reflect risk of water business and country risk premium. My procedures included comparing those assumptions to the underlying agreements and external sources, and • tested the mathematical accuracy of estimated key figures based on the above assumptions and used them to calculate the recoverable amount, then compared it with the carrying value. <p>Based on these audit procedures, I found that the impairment assessment of investment in this associate was reasonable and consistent with the supporting evidences.</p>

Other information

The directors are responsible for the other information. The other information comprises the information included in the annual report, but does not include the consolidated and separate financial statements and my auditor's report thereon. The annual report is expected to be made available to me after the date of this auditor's report.

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

In connection with my audit of the consolidated and separate financial statements, my responsibility is to read the other information identified above when it becomes available and, in doing so, consider whether the other information is materially inconsistent with the consolidated and separate financial statements or my knowledge obtained in the audit, or otherwise appears to be materially misstated.

When I read the annual report, if I conclude that there is a material misstatement therein, I am required to communicate the matter to the audit committee.

Responsibilities of the directors for the consolidated and separate financial statements

The directors are responsible for the preparation and fair presentation of the consolidated and separate financial statements in accordance with TFRS, and for such internal control as the directors determine is necessary to enable the preparation of consolidated and separate financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the consolidated and separate financial statements, the directors are responsible for assessing the Group's and the Company'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 the directors either intend to liquidate the Group and the Company or to cease operations, or has no realistic alternative but to do so.

The audit committee assists the directors in discharging their responsibilities for overseeing the Group's and the Company's financial reporting process.

Auditor's responsibilities for the audit of the consolidated and separate financial statements

My objectives are to obtain reasonable assurance about whether the consolidated and separate 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 TSAs 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 consolidated and separate financial statements.

As part of an audit in accordance with TSAs, I exercise professional judgement and maintain professional scepticism throughout the audit. I also:

- Identify and assess the risks of material misstatement of the consolidated and separate 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 and the Company's internal control.

- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by the directors.
- Conclude on the appropriateness of the directors' 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 and the Company'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 consolidated and separate 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 and the Company to cease to continue as a going concern.
- Evaluate the overall presentation, structure and content of the consolidated and separate financial statements, including the disclosures, and whether the consolidated and separate 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 the audit committee 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 the audit committee 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 the audit committee, I determine those matters that were of most significance in the audit of the consolidated and separate financial statements of the current period and are therefore the key audit matters. I describe these matters 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.

PricewaterhouseCoopers ABAS Ltd.



Boonrueng Lerdwiseswit
 Certified Public Accountant (Thailand) No. 6552
 Bangkok
 23 February 2023



STATEMENTS OF FINANCIAL POSITION

WHA Utilities and Power Public Company Limited

As at 31 December 2022

	Notes	Consolidated financial statements		Separate financial statements	
		2022	2021	2022	2021
		Baht	Baht	Baht	Baht
Assets					
Current assets					
Cash and cash equivalents	8	721,203,689	904,512,189	416,064,088	545,186,986
Trade and other receivables	9	404,600,996	295,444,144	708,450,584	524,409,681
Short-term loans to related parties	27	-	5,327,207	560,000,000	590,000,000
Other current assets		198,733,332	158,367,327	54,500,159	89,229,043
Total current assets		1,324,538,017	1,363,650,867	1,739,014,831	1,748,825,710
Non-current assets					
Financial assets measured at fair value through profit or loss	10	331,579,089	308,122,355	-	-
Long-term loans to related parties	27	225,490,552	248,490,552	6,540,250,520	5,533,490,000
Investments in associates	11	13,402,351,437	12,843,478,727	-	-
Investments in subsidiaries	12	-	-	9,524,499,944	9,524,499,944
Interests in joint ventures	11	918,340,172	844,749,065	158,900,000	158,900,000
Lease receivables	10	21,222,092	21,512,704	-	-
Property, plant and equipment	13	6,645,418,238	5,454,722,539	3,253,717,892	3,004,366,052
Intangible assets	14	1,907,737,622	1,945,712,612	1,863,669,414	1,900,824,016
Goodwill	15	2,772,877,526	2,772,877,526	597,693,413	597,693,413
Deferred income tax assets	16	3,789,987	758,644	-	-
Other non-current assets		92,048,271	34,739,335	42,378,022	33,566,573
Total non-current assets		26,320,854,986	24,475,164,059	21,981,109,205	20,753,339,998
Total assets		27,645,393,003	25,838,814,926	23,720,124,036	22,502,165,708

The accompanying notes are an integral part of these consolidated and separate financial statements.



STATEMENTS OF FINANCIAL POSITION

WHA Utilities and Power Public Company Limited

As at 31 December 2022

	Notes	Consolidated financial statements		Separate financial statements	
		2022 Baht	2021 Baht	2022 Baht	2021 Baht
Liabilities and equity					
Current liabilities					
Short-term loans	17	1,599,904,548	999,920,268	1,599,904,548	999,920,268
Trade and other payables	18	474,980,813	458,867,299	265,590,581	303,672,100
Current portion of long-term loans	17	-	1,999,332,533	-	1,999,332,533
Current portion of debentures	17	2,789,187,762	1,499,345,625	2,789,187,762	1,499,345,625
Derivative liabilities		8,242,323	-	-	-
Income tax payable		28,897,254	15,246,899	12,808,463	-
Current portion of lease liabilities		13,477,861	11,645,272	11,150,541	10,490,055
Current portion of provision for liabilities from water business	19	36,384,614	35,063,390	35,914,904	34,945,751
Other current liabilities		30,880,879	29,893,238	24,025,279	23,508,407
Total current liabilities		4,981,956,054	5,049,314,524	4,738,582,078	4,871,214,739
Non-current liabilities					
Debentures	17	9,110,728,368	7,602,308,230	9,110,728,368	7,602,308,230
Lease liabilities		412,169,690	278,502,538	277,084,806	175,054,781
Provision for liabilities from water business	19	388,698,243	389,950,283	384,096,619	386,254,204
Deferred income tax liabilities	16	80,868,873	89,809,248	36,185,748	49,671,857
Employee benefit obligations	20	23,928,427	26,864,865	23,928,427	26,864,865
Other non-current liabilities		25,618,715	18,139,155	24,848,533	17,425,355
Total non-current liabilities		10,042,012,316	8,405,574,319	9,856,872,501	8,257,579,292
Total liabilities		15,023,968,370	13,454,888,843	14,595,454,579	13,128,794,031

The accompanying notes are an integral part of these consolidated and separate financial statements.



STATEMENTS OF FINANCIAL POSITION

WHA Utilities and Power Public Company Limited

As at 31 December 2022

	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
	Baht	Baht	Baht	Baht
Liabilities and equity				
Equity				
Share capital				
Authorised share capital				
Ordinary shares,				
3,825,000,000 shares				
of par Baht 1 each	3,825,000,000	3,825,000,000	3,825,000,000	3,825,000,000
Issued and paid-up share capital				
Ordinary shares,				
3,825,000,000 shares				
of paid-up Baht 1 each	3,825,000,000	3,825,000,000	3,825,000,000	3,825,000,000
Share premium on ordinary shares	2,557,841,248	2,557,841,248	2,557,841,248	2,557,841,248
Retained earnings				
Appropriated - legal reserve	339,181,004	310,108,972	339,181,004	310,108,972
Unappropriated	2,605,547,374	3,021,976,645	1,174,062,168	1,463,193,555
Other components of equity	3,293,854,918	2,668,999,110	1,228,585,037	1,217,227,902
Equity attributable to the owners of the parent	12,621,424,544	12,383,925,975	9,124,669,457	9,373,371,677
Non-controlling interests	89	108	-	-
Total equity	12,621,424,633	12,383,926,083	9,124,669,457	9,373,371,677
Total liabilities and equity	27,645,393,003	25,838,814,926	23,720,124,036	22,502,165,708

The accompanying notes are an integral part of these consolidated and separate financial statements.



STATEMENTS OF COMPREHENSIVE INCOME

WHA Utilities and Power Public Company Limited
For the year ended 31 December 2022

	Notes	Consolidated financial statements		Separate financial statements	
		2022 Baht	2021 Baht	2022 Baht	2021 Baht
Revenues from sales		1,958,924,190	1,838,355,007	1,456,521,892	1,354,127,976
Revenues from leases and services		484,044,763	342,464,530	346,027,245	242,212,265
Costs of sales		(1,287,105,820)	(1,193,598,187)	(1,087,900,563)	(1,023,159,233)
Costs of leases and services		(373,790,578)	(282,598,662)	(211,551,231)	(154,086,572)
Gross profit		782,072,555	704,622,688	503,097,343	419,094,436
Other income	22	228,419,701	390,359,658	723,352,923	1,453,912,182
Administrative expenses		(253,256,540)	(253,233,128)	(215,998,921)	(199,199,096)
Finance costs	23	(413,142,614)	(409,316,549)	(418,827,358)	(403,512,786)
Share of profit from associates and joint ventures		155,872,887	317,339,443	-	-
Profit before income tax		499,965,989	749,772,112	591,623,987	1,270,294,736
Income tax (expense) benefit	25	(45,823,233)	(14,258,608)	(10,183,342)	12,261,350
Profit for the year		454,142,756	735,513,504	581,440,645	1,282,556,086
Other comprehensive income					
Items that will not be reclassified subsequently to profit or loss					
Remeasurements of retirement benefit obligations		6,699,156	-	6,699,156	-
Income tax on items that will not be reclassified subsequently to profit or loss	25	(1,339,831)	-	(1,339,831)	-
Remeasurements of provision for liabilities from water business		6,480,761	(70,367,367)	7,497,262	(75,859,717)
Income tax on items that will not be reclassified subsequently to profit or loss	25	(1,296,152)	14,073,473	(1,499,452)	15,171,943
Total items that will not be reclassified subsequently to profit or loss		10,543,934	(56,293,894)	11,357,135	(60,687,774)
Items that will be reclassified subsequently to profit or loss					
Currency translation differences		(11,602,403)	(16,727,033)	-	-
Share of other comprehensive income of associates and interests in joint ventures accounted for using the equity method		625,914,277	530,165,589	-	-
Total items that will be reclassified subsequently to profit or loss		614,311,874	513,438,556	-	-
Other comprehensive income (expense) for the year, net of tax		624,855,808	457,144,662	11,357,135	(60,687,774)
Total comprehensive income (expense) for the year		1,078,998,564	1,192,658,166	592,797,780	1,221,868,312

The accompanying notes are an integral part of these consolidated and separate financial statements.



STATEMENTS OF COMPREHENSIVE INCOME

WHA Utilities and Power Public Company Limited

For the year ended 31 December 2022

	Note	Consolidated financial statements		Separate financial statements	
		2022	2021	2022	2021
		Baht	Baht	Baht	Baht
Profit attributable to:					
Owners of the parent		454,142,761	735,513,498	581,440,645	1,282,556,086
Non-controlling interests		(5)	6	-	-
		<u>454,142,756</u>	<u>735,513,504</u>	<u>581,440,645</u>	<u>1,282,556,086</u>
Total comprehensive income					
attributable to:					
Owners of the parent		1,078,998,569	1,192,658,160	592,797,780	1,221,868,312
Non-controlling interests		(5)	6	-	-
		<u>1,078,998,564</u>	<u>1,192,658,166</u>	<u>592,797,780</u>	<u>1,221,868,312</u>
Earnings per share					
Basic earnings per share	26	<u>0.12</u>	<u>0.19</u>	<u>0.15</u>	<u>0.34</u>

The accompanying notes are an integral part of these consolidated and separate financial statements.



STATEMENTS OF CHANGES IN EQUITY

WHA Utilities and Power Public Company Limited

For the year ended 31 December 2022

Consolidated financial statements

		Attributable to the owners of the parent																			
		Other components of equity																			
		Retained earnings				Other comprehensive income															
		Share premium		Appropriated		Unappropriated		Currency translation		Re-measurements of employee benefit obligations		Share of other comprehensive income (expense)		Surplus arising from business combination under common control		Total owners of the parent		Non-controlling interests		Total equity	
Note		Baht		Baht		Baht		Baht		Baht		Baht		Baht		Baht		Baht		Baht	
Opening balance 2021																					
	3,825,000,000		2,557,841,248		245,981,167		3,316,403,452		(33,587,579)		(448,854)		(1,330,667,650)		3,576,558,531		12,157,080,315		119		12,157,080,434
21	-	-	-	-	-	-	(965,812,500)	-	-	-	-	-	-	-	-	-	(965,812,500)	-	-	-	(965,812,500)
Dividend paid to non-controlling interests																					
Legal reserve	-	-	-	-	-	-	(64,127,805)	-	-	-	-	-	-	-	-	-	-	-	(17)	-	(17)
Total comprehensive income (expense) for the year																					
	-	-	-	-	-	-	735,513,498	(16,727,033)	-	-	-	-	530,165,589	-	(56,293,894)	-	1,192,658,160	6	-	-	1,192,658,166
Closing balance 2021																					
	3,825,000,000		2,557,841,248		310,108,972		3,021,976,645		(50,314,612)		(448,854)		(800,502,061)		3,520,264,637		12,383,925,975		108		12,383,926,083
21	-	-	-	-	-	-	(841,500,000)	-	-	-	-	-	-	-	-	-	(841,500,000)	-	-	-	(841,500,000)
Dividend paid from subsidiaries to non-controlling interests																					
Legal reserve	-	-	-	-	-	-	(29,072,032)	-	-	-	-	-	-	-	-	-	-	-	(14)	-	(14)
Total comprehensive income (expense) for the year																					
	-	-	-	-	-	-	454,142,761	(11,602,403)	-	-	-	-	625,914,277	-	5,184,609	-	1,078,998,569	(5)	-	-	1,078,998,564
Closing balance 2022																					
	3,825,000,000		2,557,841,248		339,181,004		2,605,547,374		(61,917,015)		4,910,471		(174,587,784)		3,525,449,246		12,621,424,544		89		12,621,424,633

The accompanying notes are an integral part of these consolidated and separate financial statements.



STATEMENTS OF CHANGES IN EQUITY

WHA Utilities and Power Public Company Limited
For the year ended 31 December 2022

Separate financial statements													
Other components of equity													
Other comprehensive income													
Surplus arising													
Re-measurements of employee benefit obligations													
from business combination under common control													
Total equity													
Note	Issued and paid-up share capital	Share premium on ordinary shares	Appropriated - legal reserve	Unappropriated	Re-measurements of employee benefit obligations	Surplus arising from business combination under common control	Total equity						
	Baht	Baht	Baht	Baht	Baht	Baht	Baht						

The accompanying notes are an integral part of these consolidated and separate financial statements.



STATEMENTS OF CASH FLOWS

WHA Utilities and Power Public Company Limited

For the year ended 31 December 2022

	Notes	Consolidated financial statements		Separate financial statements	
		2022	2021	2022	2021
		Baht	Baht	Baht	Baht
Cash flows from operating activities					
Profit before income tax		499,965,989	749,772,112	591,623,987	1,270,294,736
Adjustments for :					
Reversal of impairment losses on financial assets		(10,060,876)	(1,190,895)	(10,060,876)	(1,190,895)
Depreciation	13	319,708,864	275,387,856	178,605,255	163,304,638
Amortisation	14	47,678,720	47,403,223	46,509,837	46,420,618
Loss from measurement of financial instruments		8,242,323	-	-	-
Changes in fair value of financial assets measured at fair value through profit or loss		(23,456,734)	20,650,163	-	-
(Gain) loss from disposal of plant and equipment		39,147	(2,335,626)	39,147	(2,394,194)
Gain from exchange rate		(113,723,749)	(306,516,909)	-	-
Employee benefit obligations	20	3,762,718	4,294,770	3,762,718	4,294,770
Interest income	22	(14,533,143)	(13,026,289)	(190,671,971)	(179,235,980)
Dividend income		(35,354,252)	(50,003,253)	(531,285,986)	(1,270,925,985)
Finance costs	23	413,142,614	409,316,549	418,827,358	403,512,786
Share of profit from associates and joint ventures		(155,872,887)	(317,339,443)	-	-
Changes in operating assets and liabilities:					
Trade and other receivables		(99,118,036)	(52,635,173)	786,257	(58,942,397)
Other current assets		(53,518,800)	70,590,243	22,290,147	27,801,320
Lease receivables		236,842	334,409	-	-
Other non-current assets		(45,486,685)	(512,813)	(890,653)	(346,099)
Trade and other payables		79,079,799	36,465,112	4,988,193	35,130,014
Other current liabilities		987,641	1,487,181	516,872	(362,849)
Provision for liabilities from water business	19	(34,121,719)	(30,437,043)	(33,990,425)	(30,324,553)
Other non-current liabilities		7,479,560	(8,162,429)	7,423,178	2,260,622
Cash generated from operations		795,077,336	833,541,745	508,473,038	409,296,552
Interest received		14,608,973	12,979,158	15,905,689	138,752,122
Interest paid		(366,432,689)	(332,375,796)	(372,489,843)	(326,990,735)
Dividend received		382,724,255	995,716,558	531,285,986	1,270,925,985
Income tax refund received		5,283,190	6,095,552	4,536,737	5,663,252
Income tax paid		(50,715,105)	(44,536,810)	(13,719,070)	(7,910,997)
Net cash receipts from operating activities		780,545,960	1,471,420,407	673,992,537	1,489,736,179

The accompanying notes are an integral part of these consolidated and separate financial statements.



STATEMENTS OF CASH FLOWS

WHA Utilities and Power Public Company Limited

For the year ended 31 December 2022

	Notes	Consolidated		Separate	
		financial statements		financial statements	
		2022	2021	2022	2021
		Baht	Baht	Baht	Baht
Cash flows from investing activities					
Payments for loans to related parties	27	(27,000,000)	(5,327,207)	(1,214,760,520)	(1,840,000,000)
Proceeds from loans to related parties	27	55,753,072	-	238,000,000	1,788,000,000
Payments for investments in associates		-	(3,751,500)	-	-
Payments for investments in subsidiaries		-	-	-	-
Payments for investments in joint venture	11	(105,172,200)	(18,899,986)	-	-
Payments for purchase of property, plant and equipment		(1,429,773,356)	(580,166,226)	(358,578,065)	(109,833,300)
Proceeds from disposal of plant and equipment		18,692	1,129,635	18,692	351,512
Payments for purchase of intangible assets		(9,703,730)	(5,203,445)	(9,355,235)	(2,224,319)
Net cash payments from investing activities		(1,515,877,522)	(612,218,729)	(1,344,675,128)	(163,706,107)
Cash flows from financing activities					
Proceeds from short-term loans	17	2,500,000,000	3,300,000,000	2,500,000,000	3,300,000,000
Payments for issuance cost of short-term loans	17	(1,340,000)	(3,305,890)	(1,340,000)	(3,305,890)
Repayments of short-term loans	17	(1,900,000,000)	(2,300,000,000)	(1,900,000,000)	(2,300,000,000)
Repayments of long-term loans	17	(2,000,000,000)	(2,875,000,000)	(2,000,000,000)	(2,875,000,000)
Proceeds from debentures	17	4,300,000,000	3,500,000,000	4,300,000,000	3,500,000,000
Payments for issuance debentures	17	(5,864,000)	(4,877,000)	(5,864,000)	(4,877,000)
Repayments of debentures	17	(1,500,000,000)	(2,390,000,000)	(1,500,000,000)	(2,390,000,000)
Payments for lease liabilities		(11,006,597)	(9,992,645)	(9,743,743)	(9,675,850)
Dividend paid	21	(841,492,564)	(965,844,882)	(841,492,564)	(965,844,882)
Dividend to non-controlling interests	21	(14)	(17)	-	-
Net cash (payments) receipts from financing activities		540,296,825	(1,749,020,434)	541,559,693	(1,748,703,622)
Net decrease in cash and cash equivalents		(195,034,737)	(889,818,756)	(129,122,898)	(422,673,550)
Cash and cash equivalents at the beginning of the year		904,512,189	1,784,154,716	545,186,986	967,860,536
Exchange rate effect on cash and cash equivalents		11,726,237	10,176,229	-	-
Cash and cash equivalents at the end of the year		721,203,689	904,512,189	416,064,088	545,186,986
Non-cash transactions					
Account payables from purchase of property, plant and equipment		131,104,575	193,998,535	10,748,313	53,745,699
Lease assets and liabilities	13	146,506,338	96,986,523	112,434,255	61,530,649
Dividend payable		177,278	169,842	177,278	169,842

The accompanying notes are an integral part of these consolidated and separate financial statements.



NOTES TO THE CONSOLIDATED AND SEPARATE FINANCIAL STATEMENTS

WHA Utilities and Power Public Company Limited

For the year ended 31 December 2022

1 General information

WHA Utilities and Power Public Company Limited (the Company) is a public limited company which is listed on the Stock Exchange of Thailand and is incorporated and has resided in Thailand. The address of the Company's registered office is as follows:

777 WHA TOWER, 22nd Floor, Unit 2203-2205, Moo 13, Debaratna Road (Bangna-Trad) KM.7, Bang Kaeo, Bang Phli, Samut Prakarn 10540.

The principal business operations of the Company and subsidiaries (together "the Group") are to produce and distribute the industrial water, provide waste water treatment service in industrial estate, operate solar power business and invest in water and power business.

These consolidated and separate financial statements were authorised for issue by the Board of Directors on 23 February 2023.

2 Basis of preparation

The consolidated and separate financial statements have been prepared in accordance with Thai Financial Reporting Standards (TFRS) and the financial reporting requirements issued under the Securities and Exchange Act.

The consolidated and separate financial statements have been prepared under the historical cost convention except as disclosed in the accounting policies below.

The preparation of financial statements in conformity with TFRS requires management to use certain critical accounting estimates and to exercise its judgement in applying the Group's accounting policies. The areas involving a higher degree of judgement or complexity, or areas that are more likely to be materially adjusted due to changes in estimates and assumptions are disclosed in Note 6.

An English version of the consolidated and separate financial statements have been prepared from the statutory financial statements that are in the Thai language. In the event of a conflict or a difference in interpretation between the two languages, the Thai language statutory financial statements shall prevail.

3 New and amended financial reporting standards

New and amended financial reporting standards effective for the accounting periods beginning on or after 1 January 2022 do not have material impact on the Group and the Company.

The Group and the Company has not yet early adopted the amended financial reporting standards which are effective on 1 January 2023. The Group and the Company's management is currently assessing the impact from the adoption of these standards.

4 Accounting policies

4.1 Principles of consolidated and equity accounting

Subsidiaries

Subsidiaries are all entities over which the Group has control. The Group controls an entity when the Group is exposed to, or has rights to, variable returns from its involvement with the entity and has the ability to affect those returns through its power over the entity. Subsidiaries are consolidated from the date on which control is transferred to the Group until the date that control ceases.

In the separate financial statements, investments in subsidiaries are accounted for using cost method less allowance for impairment (If any).

Associates

Associates are all entities over which the Group has significant influence but not control or joint control. Investments in associates are accounted for using the equity method of accounting.

In the separate financial statements, investments in associates are accounted for using cost method less allowance for impairment (If any).

Joint arrangements

Investments in joint arrangements are classified as either joint operations or joint ventures depending on the contractual rights and obligations of each investor, rather than the legal structure of the joint arrangements.

A joint venture is a joint arrangement whereby the Group has rights to the net assets of the arrangement. Investments in joint ventures are accounted for using the equity method.

In the separate financial statements, investments in joint ventures are accounted for using cost method less allowance for impairment (If any).

Equity method

The investment is initially recognised at cost which is consideration paid plus directly attributable costs.

The Group's subsequently recognises the proportion of shares of its associates and joint ventures' profits or losses in share of profit or loss in the statement of income and the statement of other comprehensive income, respectively. The subsequent cumulative movements are adjusted against the carrying amount of the investment.

When the Group's share of losses in associates and joint ventures equals or exceeds its interest in the associates and joint ventures, the Group does not recognise further losses, unless it has incurred obligations or made payments on behalf of the associates and joint ventures.

Intercompany transactions on consolidation

Intra-group transactions, balances and unrealised gains on transactions are eliminated. Unrealised gains on transactions between the Group and its associates and joint ventures are eliminated to the extent of the Group's interest in the associates and joint ventures. Unrealised losses are also eliminated in the same manner unless the transaction provides evidence of an impairment of the asset transferred.

Business combination under common control

The Group accounts for business combination under common control by measuring acquired assets and liabilities of the acquiree at their carrying values presented in the highest level of the consolidation. The Group retrospectively adjusted the business combination under common control transactions as if the combination had occurred on the later of the beginning of the preceding comparative period and the date the acquiree has become under common control.

Consideration of business combination under common control are the aggregated amount of fair value of assets transferred, liabilities incurred and equity instruments issued by the acquirer at the date of which the exchange in control occurs.

The difference between consideration under business combination under common control and the acquirer's interests in the carrying value of the acquiree, including changes in contingent consideration (apart from interest portion) are presented as "surplus arising from business combination under common control" in equity and is derecognised when the investment is disposed by transferring to retained earnings.

4.2 Foreign currency translation

Functional and presentation currency

The financial statements are presented in Thai Baht, which is the Group's and the Company's functional and presentation currency.

Transactions and balances

Foreign currency transactions are translated into the functional currency using the exchange rates prevailing at the dates of the transactions or the date of revaluation where items are re-measured.

Foreign exchange gains and losses resulting from the settlement of such transactions and from the translation at year-end exchange rates of monetary assets and liabilities denominated in foreign currencies are recognised in the profit or loss.

When gains and losses on a non-monetary item is recognised in other comprehensive income any exchange components of gains and losses are also recognised in other comprehensive income. In contrary, gains and losses on a non-monetary item recognised in profit or loss, any exchange components of gains or losses are also recognised in profit or loss.

Group companies

The operational results and financial position of the Group's entities (none of which has the currency of a hyper-inflationary economy) that have a different functional currency from the Group's presentation currency are translated into the presentation currency as follows:

- Assets and liabilities are translated at the closing rate at the date of respective statement of financial position;
- Income and expenses for statement of comprehensive income are translated at average exchange rates; and
- All resulting exchange differences are recognised in other comprehensive income.

4.3 Cash and cash equivalents

In the statements of cash flows, cash and cash equivalents includes cash on hand, deposits held at call, short-term highly liquid investments with maturities of three months or less from acquisition date.

4.4 Trade accounts receivable

Trade receivables are amounts due from customers for goods sold or service performed in the ordinary course of business. They are generally due for settlement within 30 days and therefore are classified as current.

Trade receivables are recognised initially at the amount of consideration that is unconditional unless they contain significant financing components, they are recognised at fair value. The Group holds the trade receivables with the objective to collect the contractual cash flows and therefore measures them subsequently at amortised cost.

4.5 Financial asset

Classification

The Group classifies its debt instrument financial assets in the following measurement categories depending on i) business model for managing the asset and ii) the cash flow characteristics of the asset whether they represent SPPI.

- those to be measured subsequently at fair value (either through other comprehensive income or through profit or loss); and
- those to be measured at amortised cost.

The Group reclassifies debt investments when and only when its business model for managing those assets changes.

For investments in equity instruments, the Group has an irrevocable election at the time of initial recognition to account for the equity investment at fair value through profit or loss (FVPL) or at fair value through other comprehensive income (FVOCI) except those that are held for trading, they are measured at FVPL.

Recognition and derecognition

Regular way purchases, acquires and sales of financial assets are recognised on trade-date, the date on which the Group commits to purchase or sell the asset. Financial assets are derecognised when the rights to receive cash flows from the financial assets have expired or have been transferred and the Group has transferred substantially all the risks and rewards of ownership.

Measurement

At initial recognition, the Group measures a financial asset at its fair value plus, in the case of a financial asset not at FVPL, transaction costs that are directly attributable to the acquisition of the financial asset. Transaction costs of financial assets carried at FVPL are expensed in profit or loss.

Financial assets with embedded derivatives are considered in their entirety when determining whether the cash flows are SPPI.

Debt instruments

Subsequent measurement of debt instruments depends on the Group's business model for managing the asset and the cash flow characteristics of the financial assets. There are three measurement categories into which the Group classifies its debt instruments:

- **Amortised cost:** Financial assets that are held for collection of contractual cash flows where those cash flows represent SPPI are measured at amortised cost. Interest income from these financial assets is included in other income using the effective interest rate method. Any gain or loss arising on derecognition is recognised directly in profit or loss and presented in other gains or losses together with foreign exchange gains and losses. Impairment losses are presented as a separate line item in the statement of comprehensive income.

- FVOCI: Financial assets that are held for i) collection of contractual cash flows where those cash flows represent SPPI and ii) for selling the financial assets are measured at FVOCI. Movements in the carrying amount are taken through other comprehensive income (OCI), except for the recognition of impairment losses (reversal), interest income using the effective interest method, and foreign exchange gains and losses which are recognised in profit or loss. When the financial assets is derecognised, the cumulative gain or loss previously recognised in OCI is reclassified from equity to profit or loss and recognised in other gains or losses. Interest income is included in other income. Impairment expenses are presented separately in the statement of comprehensive income.
- FVPL: Financial assets that do not meet the criteria for amortised cost or FVOCI are measured at FVPL. A gain or loss on a debt investment that is subsequently measured at FVPL is recognised in profit or loss and presented net within other gains or losses in the period in which it arises.

Equity instruments

The Group measures all equity investments at fair value. Where the Group has elected to present fair value gains or losses on equity instruments in OCI, there is no subsequent reclassification of fair value gains or losses to profit or loss following the derecognition of the investment. Dividends from such investments continue to be recognised in profit or loss as other income when the right to receive payments is established.

Changes in the fair value of financial assets at FVPL are recognised in other gains or losses in the statement of comprehensive income.

Impairment losses (and reversal of impairment losses) on equity investments are presented as part of changes in fair value.

Impairment

The Group applies the TFRS 9 simplified approach in measuring the impairment of trade receivables, contract assets and lease receivables, which applies lifetime expected credit loss, from initial recognition, for all trade receivables, contract assets and lease receivables.

To measure the expected credit losses, trade receivables and contract assets have been grouped based on shared credit risk characteristics and the days past due. The contract assets relate to unbilled work in progress and have substantially the same risk characteristics as the trade receivables for the same types of contracts. The management has therefore concluded that the expected loss rates for trade receivables are reasonably approximate of the loss rates of the contract assets. The expected credit loss rates are based on payment profiles, historical credit losses as well as forward-looking information and factors that may affect the ability of the customers to settle the outstanding balances.

For other financial assets carried at amortised cost and FVOCI, the Group applies general approach under TFRS 9 in measuring the impairment of those financial assets. Under the general approach, the 12-month or the lifetime expected credit loss is applied depending on whether there has been a significant increase in credit risk since the initial recognition.

The Group assessed credit risk whether there are significant changes of credit risks from the initial recognition at the end of each reporting period by comparing i) expected risk of default as of the reporting date and ii) estimated risk of default on the date of initial recognition.

The Group assesses expected credit loss by taking into consideration forward-looking information and past experiences. The expected credit loss is a probability-weighted estimate of credit losses (probability-weighted present value of estimated cash shortfall). The cash shortfall is the difference between all contractual cash flows that are due to the Group and all cash flows expected to receive, discounted at the original effective interest rate.

When measuring expected credit losses, the Group reflects the following:

- probability-weighted estimated uncollectible amounts,
- time value of money; and
- supportable and reasonable information as at the reporting date about past experience, current conditions and forecasts of future situations.

Impairment (and reversal of impairment) losses are recognised in profit or loss and included in administrative expenses.

4.6 Property, plant and equipment

All property, plant and equipment are stated at historical cost less accumulated depreciation and impairment losses. Historical cost includes expenditure that is directly attributable to the acquisition of the assets.

Subsequent costs are capitalised and included in the asset's carrying amount, only when it is probable that future economic benefits associated with the item will flow to the Group. The carrying amount of the replaced part is derecognised.

All other repairs and maintenance are charged to profit or loss when incurred.

Land is not depreciated. Depreciation on other assets is calculated using the straight-line method to allocate their cost to their residual values over their estimated useful lives, or the straight-line method over the shorter of the asset's useful life and the lease term, for the right-of-use asset, as follows:

	<u>Years</u>
Right-of-use land	15 - 47 years
Building improvements	5 and 10 years
Buildings and structure	30 years
Tools	5 and 15 years
Equipment, furniture and fixtures	5 years
Vehicles	5 years
Raw water pipes	25 years
Industrial water production systems	30 years
Waste water treatment systems	30 years
Solar systems	5 - 25 years

The assets' residual values and useful lives are reviewed, and adjusted if appropriate, at the end of each reporting period.

Gains or losses on disposals are determined by comparing the proceeds with the carrying amount and are recognised in profit or loss.

4.7 Intangible assets

Right to operate and distribute the industrial water and to provide waste water treatment service

Right to operate and distribute the industrial water and to provide waste water treatment service to customers in the industrial estate is measured at historical cost and subsequently carried at cost less accumulated amortisation and accumulated impairment losses. The amortisation is calculated using the straight-line method over 25 or 50 years which are contractual life.

Computer software and water plant maintenance program

Computer software and water plant maintenance program's costs are recognised as assets and are amortised over their estimated useful lives, which does not exceed 3 years.

All other repairs and maintenance are charged to profit or loss when incurred.

4.8 Goodwill

Goodwill is tested for impairment annually, or more frequently if events or changes in circumstances indicate that it might be impaired, and is carried at cost less accumulated impairment losses.

For the purpose of impairment testing, goodwill is allocated to cash-generating units or groups of cash-generating units that are expected to benefit from the business combination in which the goodwill arose. The units or groups of units are identified at the lowest level at which goodwill is monitored for internal management purposes.

4.9 Impairment of assets

Assets are reviewed for impairment whenever there is an indication of impairment. An impairment loss is recognised for the amount by which the carrying amount of the assets exceeds its recoverable amount. The recoverable amount is the higher of an asset's fair value less costs of disposal and value-in-use.

Where the reasons for previously recognised impairments no longer exist, the impairment losses on the assets concerned other than goodwill is reversed.

4.10 Leases

Leases - where the Group is the lessee

Leases are recognised as a right-of-use asset and a corresponding liability at the date at which the leased asset is available for use by the Group. Each lease payment is allocated between the liability and finance cost. The finance cost is charged to profit or loss over the lease period so as to produce a constant periodic rate of interest on the remaining balance of the liability for each period. The right-of-use asset is depreciated over the shorter of the asset's useful life and the lease term on a straight-line basis.

Contracts may contain both lease and non-lease components. The Group allocates the consideration in the contract to the lease and non-lease components based on their relative stand-alone prices. However, for leases of real estate for which the group is a lessee, it has elected not to separate lease and non-lease components and instead accounts for these as a single lease component.

Assets and liabilities arising from a lease are initially measured at a present value basis. Lease liabilities include the net present value of the following lease payments:

- fixed payments (including in-substance fixed payments), less any lease incentives receivable,
- variable lease payment that are based on an index or a rate,
- amounts expected to be payable by the lessee under residual value guarantees,
- the exercise price of a purchase option if the lessee is reasonably certain to exercise that option, and
- payments of penalties for terminating the lease, if the lease term reflects the lessee exercising that option.

Lease payments from extension options are also included in the measurement of the liability if the Group assessed that the extension is reasonably certain.

The lease payments are discounted using the interest rate implicit in the lease. If that rate cannot be determined, the lessee's incremental borrowing rate which is the rate that the lessee would have to pay to borrow the funds necessary to obtain an asset of similar value in a similar economic environment with similar terms and conditions, will be used.

Right-of-use assets are measured at cost comprising the following:

- the amount of the initial measurement of lease liability,
- any lease payments made at or before the commencement date less any lease incentives received,
- any initial direct costs, and
- restoration costs.

Right-of-use assets are presented in property, plant and equipment in the statement of financial position.

Payments associated with short-term leases and leases of low-value assets are recognised on a straight-line basis as an expense in profit or loss. Short-term leases are leases with a lease term of 12 months or less.

Leases - where the Group is the lessor

When assets are leased out under a finance lease, the present value of the lease payments is recognised as a receivable. The difference between the gross receivable and the present value of the receivable is recognised as unearned finance income. Lease income is recognised over the term of the lease which reflects a constant periodic rate of return. Initial direct costs are included in initial measurement of the finance lease receivable and reduce the amount of income recognised over the lease term.

Rental income under operating leases (net of any incentives given to lessees) is recognised on a straight-line basis over the lease term. Initial direct costs incurred in obtaining an operating lease are added to the carrying amount of the underlying asset and recognised as expense over the lease term on the same basis as lease income. The respective leased assets are included in the statement of financial position based on their nature.

4.11 Financial liabilities

Classification

Financial instruments issued by the Group are classified as either financial liabilities or equity securities by considering contractual obligations as follows:

- Where the Group has an unconditional contractual obligation to deliver cash or another financial asset to another entity, it is considered a financial liability unless there is a predetermined or possible settlement for a fixed amount of cash in exchange of a fixed number of the Group's own equity instruments.
- Where the Group has no contractual obligation or has an unconditional right to avoid delivering cash or another financial asset in settlement of the obligation, it is considered an equity instrument.

Borrowings are classified as current liabilities unless the Group has an unconditional right to defer settlement of the liability for at least 12 months after the reporting date.

Measurement

Financial liabilities are initially recognised at fair value and are subsequently measured at amortised cost.

Derecognition and modification

Financial liabilities are derecognised when the obligation specified in the contract is discharged, cancelled, or expired.

Where the terms of a financial liability are renegotiated or modified, the Group assesses whether the renegotiation or modification results in the derecognition of that financial liability. Where the modification results in an extinguishment, the new financial liability is recognised based on fair value of its obligation. The remaining carrying amount of financial liability is derecognised. The difference as well as proceed paid is recognised as other gains or losses in profit or loss.

Where the modification does not result in the derecognition of the financial liability, the carrying amount of the financial liability is recalculated as the present value of the renegotiated or modified contractual cash flows discounted at its original effective interest rate. The difference is recognised in other gains or losses in profit or loss.

4.12 Borrowing costs

General and specific borrowing costs directly attributable to the acquisition, construction or production of qualifying assets are added to the cost of those assets less investment income earned from those specific borrowings. The capitalisation of borrowing costs is ceased when substantially all the activities necessary to prepare the qualifying asset for its intended use or sale are complete.

Other borrowing costs are expensed in the period in which they are incurred.

4.13 Current and deferred income taxes

The tax expense for the year comprises current and deferred tax. Tax is recognised in profit or loss, except to the extent that it relates to items recognised in other comprehensive income or directly in equity.

Current tax

The current income tax is calculated on the basis of the tax laws enacted or substantially enacted at the end of the reporting period. Management periodically evaluates positions taken in tax returns with respect to situations in which applicable tax regulation is subject to interpretation. It establishes provisions where appropriate on the basis of amounts expected to be paid to the tax authorities.

Deferred income tax

Deferred income tax is recognised on temporary differences arising from differences between the tax base of assets and liabilities and their carrying amounts in the financial statements. However, deferred income tax is not recognised for temporary differences arise from:

- initial recognition of an asset or liability in a transaction other than a business combination that affects neither accounting nor taxable profit or loss.
- investments in subsidiaries, associates and joint arrangements where the timing of the reversal of the temporary difference is controlled by the Group and it is probable that the temporary difference will not reverse in the foreseeable future.

Deferred income tax is measured using tax rates of the period in which temporary difference is expected to be reversed, based on tax rates and laws that have been enacted or substantially enacted by the end of the reporting period.

Deferred tax assets are recognised only to the extent that it is probable that future taxable profit will be available against which the temporary differences can be utilised.

Deferred tax assets and liabilities are offset when there is a legally enforceable right to offset current tax assets and liabilities and when the deferred income tax assets and liabilities related to income taxed levied by the same tax authority on either the same taxable entity or different taxable entities where there is an intention to settle the balances on a net basis.

4.14 Employee benefits

Short-term employee benefits

Liabilities for short-term employee benefits are expected to be settled wholly within 12 months after the end of the period are recognised in respect of employees' service up to the end of the reporting period. They are measured at the amount expected to be paid.

Defined contribution plan

The Group pays contributions to a separate fund. The Group has no further payment obligations once the contributions have been paid. The contributions are recognised as employee benefit expense when they are due.

Defined benefit plans

Amount of retirement benefits is defined as the benefits the employees will receive when retire. It usually depends on factors such as age, years of service and an employee's latest compensation at retirement.

The defined benefit obligation is calculated by an independent actuary using the projected unit credit method. The present value of the defined benefit obligation is determined by discounting the estimated future cash outflows using market yield of government bonds that matches the terms and currency of the expected cash outflows.

Remeasurement gains and losses are recognised directly to other comprehensive income in the period in which they arise. They are presented as a separate item in statements of changes in equity.

Past service costs are recognised immediately in profit or loss.

4.15 Provisions

Provisions are recognised when the Group has a present legal or constructive obligation as a result of past events, it is probable that an outflow of resources will be required to settle the obligation and the amount has been reliably estimated.

Provisions are measured at the present value of the expenditures expected to be required to settle the obligation. The increase in the provision due to passage of time is recognised as interest expense.

4.16 Revenue recognition

Revenue include all revenues from ordinary business activities. All ancillary income in connection with the delivery of goods and rendering of services in the course of the Group's ordinary activities is also presented as revenue.

Revenue are recorded net of value added tax. They are recognised in accordance with the provision of goods or services, provided that collectibility of the consideration is probable.

Multiple element arrangements involving delivery or provision of multiple products or services are separated into distinct performance obligations. Total transaction price of the bundled contract is allocated to each performance obligation based on their relative standalone selling prices or estimated standalone selling prices. Each performance obligation is recognised as revenue on fulfillment of the obligation to the customer.

Revenue from sales

Revenue from sales of industrial water are recognised at a point in time when the controls over the industrial water is transferred to customers at destinations as stated in the agreements. The revenue under the sales of industrial water is recognised based on transaction price net of output tax, rebates and discounts.

Revenue from service

The Group recognises revenue under the waste water treatment service over time when rendering services to customer according to the agreements. If the Group receives consideration more than the services rendered, the Group recognises the excess consideration as a contract liability. On the other hand, if the Group receives consideration less than the services rendered, the Group recognises the consideration as a contract asset.

Rental income from operating leases

The Group recognised rental income (net of incentive paid to the lessee) as revenue on a straight-line basis over the contract term, regardless of the payment pattern.

Interest earned from financial leases

The assets under the finance lease are recognised as finance lease receivables at the present value of the lease payments. The difference between the total amount of receivables that has not yet been discounted and the present value of the receivable is gradually recognised as financial income using the net investment method reflecting the constant rate of return. Initial direct costs are included in initial measurement of the finance lease receivable and are gradually recognised by reducing income over the life of the lease.

Interest income

Interest income is recognised on a time proportion basis, taking into account of the principal outstanding and the effective rate over the period to maturity, when it is determined that such income will accrue to the Group.

Dividend income

Dividend income is recognised when the right to receive payment is established.

Other income

Other income is recognised on an accrual basis.

Financing components

The Group does not have any contracts where the period between the transfer of the promised of goods or services to the customer and payment by the customer exceeds one year. As a consequence, the Group does not adjust any of the transaction prices for the time value of money.

4.17 Dividend distribution

Dividend distributed to the Company's shareholders is recognised as a liability when interim dividends are approved by the Board of Directors, and when the annual dividends are approved by the company's shareholders' meeting.

4.18 Derivatives and hedging activities

The Group recognised derivatives at fair value with changes in fair value recognised in profit or loss, unless hedges accounting is applied. Gain or loss on derivatives under hedge accounting relating to effective portion are recognised to other components of equity while gain or loss of ineffective portion are recognised to profit or loss.

5 Financial risk management

5.1 Financial risk factors

The Group exposes to a variety of financial risk which are market risk (including foreign exchange risk and interest rate risk), credit risk and liquidity risk. The Group's overall risk management programme focuses on the unpredictability of financial markets and seeks to minimise potential adverse effects on the Group's financial performance. The Group uses derivative financial instruments to hedge certain exposures.

Financial risk management is carried out by the Group Treasury Committee. The principle risks framework are approved by the Board of Directors and uses as the key communication and control tools for Treasury team of all entities within the Group.

5.1.1 Market risk

Foreign exchange risk

Since the core business of the Group's associates is production and distribution of electricity with partial sources of loans denominated in foreign currencies, the Group's share of profit from associate is exposed to foreign currency risk from the borrowings. The associates seek to reduce this risk by entering into derivative financial instruments to hedge foreign currency exposure when they consider appropriate.

Interest rate risk

The Group has interest rate risk from borrowings and debentures at fixed and floating interest rates. The Group has no significant interest-bearing assets.

5.1.2 Credit risk

Risk management

Credit risk is managed at a group level. For deposits at banks, financial institutions and other issuers, the Group will transact with the financial institutions or issuers that the Group assessed as reliable.

If customers are independently rated, these ratings are used. If there is no independent rating, the Group assesses the credit quality of the customer by taking into account its financial position, past experience and other factors. Individual risk limits are set based on these factors and the credit limits is set by the Company's board of director. The compliance with credit limits by customers is regularly monitored by line management.

There are no significant concentrations of credit risk, whether through exposure to individual customers or specific industry sectors.

Impairment of financial assets

The Group has financial assets that are subject to the expected credit loss model as follows:

- Trade and other receivables
- Contract assets
- Debt investments carried at amortised cost.

While cash and cash equivalents are also subject to the impairment requirements of TFRS 9, the identified impairment loss was immaterial.

5.1.3 Liquidity risk

Prudent liquidity risk management of the Group comprises of maintaining sufficient cash and marketable securities and the availability of funding through an adequate amount of committed credit facilities to meet obligations when due and to close out market positions.

Due to the dynamic nature of the underlying businesses, the group treasury maintains flexibility in funding by maintaining availability under committed credit lines.

Management regularly monitors cashflows rolling forecasts of the Group's liquidity reserve which comprises the undrawn borrowing facilities and cash and cash equivalents. In addition, the Group's liquidity management policy involves projecting cash flows in major currencies and considering the liquidity of assets and maintaining liquidity ratios to meet the financing plans obligation.

Financing arrangements

The Group had access to the following undrawn credit facilities as follows:

	Consolidated and separate financial statements	
	2022 Million Baht	2021 Million Baht
Expiring within one year		
Promissory note	2,200	1,889
Bank loans	1,000	1,800
Total	3,200	3,689

Maturity of financial liabilities

The tables below analyse the financial liabilities into relevant maturity groupings based on their contractual maturities. The amounts disclosed are the contractual undiscounted cash flows. Balances due within 12 months equal their carrying balances as the impact of discounting is not significant.

	Consolidated financial statements				
	On demand Million Baht	Within 1 year Million Baht	1-5 years Million Baht	Over 5 years Million Baht	Total Million Baht
As at 31 December 2022					
Trade and other payables	-	369	-	-	369
Short-term loans	-	1,610	-	-	1,610
Debentures	-	3,122	8,311	1,622	13,055
Lease liabilities	-	33	111	1,026	1,170
Provision for liabilities from water business	-	36	165	1,489	1,690
Water guarantee received	-	-	-	7	7
Total	-	5,170	8,587	4,144	17,901
As at 31 December 2021					
Trade and other payables	-	385	-	-	385
Short-term loans	-	1,007	-	-	1,007
Long-term loans	-	2,038	-	-	2,038
Debentures	-	1,759	6,607	1,671	10,037
Lease liabilities	-	25	69	731	825
Provision for liabilities from water business	-	35	166	1,532	1,733
Water guarantee received	-	-	-	7	7
Total	-	5,249	6,842	3,941	16,032

	Separate financial statements					Carrying amount Million Baht
	On demand Million Baht	Within 1 year Million Baht	1-5 years Million Baht	Over 5 years Million Baht	Total Million Baht	
As at 31 December 2022						
Trade and other payables	-	169	-	-	169	169
Short-term loans	-	1,610	-	-	1,610	1,600
Debentures	-	3,122	8,311	1,622	13,055	11,900
Lease liabilities	-	25	73	719	817	288
Provision for liabilities from water business	-	36	163	1,469	1,668	420
Water guarantee received	-	-	-	6	6	6
Total	-	4,962	8,547	3,816	17,325	14,383
As at 31 December 2021						
Trade and other payables	-	231	-	-	231	231
Short-term loans	-	1,007	-	-	1,007	1,000
Long-term loans	-	2,038	-	-	2,038	1,999
Debentures	-	1,759	6,607	1,671	10,037	9,102
Lease liabilities	-	19	44	450	513	186
Provision for liabilities from water business	-	35	165	1,515	1,715	421
Water guarantee received	-	-	-	6	6	6
Total	-	5,089	6,816	3,642	15,547	12,945

5.2 Capital management

5.2.1 Risk management

The objectives when managing capital are to:

- safeguard the Group's ability to continue as a going concern, so that the Group can continue to provide returns for shareholders and benefits for other stakeholders, and
- maintain an optimal capital structure to reduce the cost of capital.

In order to maintain or adjust the capital structure, the Group may adjust the amount of dividends paid to shareholders, return capital to shareholders, issue new shares or sell assets to reduce debt.

Consistent with others in the industry, the Group regularly monitors capital based on the basis of the following gearing ratio. The Group's strategy was to maintain the interest bearing debt to equity: IBD/E ratio to not more than 2.5: 1 and a A- credit rating. The credit rating was unchanged and the gearing ratios at 31 December were as follows:

	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
Net debt to equity ratio	1.19 : 1	1.09 : 1	1.60 : 1	1.40 : 1

Loan covenants

The Group is in compliance with the financial ratio under the terms and conditions of the major borrowing facilities, throughout the reporting period.

6 Critical accounting estimates and judgements

Estimates and judgements are continually evaluated and are based on historical experience and other factors, including expectations of future events that are believed to be reasonable under the circumstances.

Fair value of certain financial assets and derivatives

The fair value of financial instruments that are not traded in an active market is determined using valuation techniques. The Group uses judgement to select a variety of methods and make assumptions that are mainly based on market conditions that exist at the end of each reporting period.

Goodwill impairment

The recoverable amounts of cash-generating units have been determined based on fair value less costs of disposal calculation. The calculations use cash flow projections based on financial budget approved by management covering a five-year period.

Cash flows after the five-year period are extrapolated using the estimated growth rates stated in Note 15. These growth rates are consistent with growth forecasts included in industry reports specific to the industry in which the CGU is operated.

Impairment of investments in associate

The Group tests impairment of investments in associate when events or changes in circumstances indicate that the carrying value of the investment is higher than its recoverable amounts by applying the fair value less costs of disposal model. The fair value less costs of disposal model involves management's significant judgments with respect to the future operating results of business, projected cash flows, appropriate discount rate to be applied to the projected cash flows. Key assumptions applied in the fair value less costs of disposal model are the estimated water selling price per cubic metre, estimated sale volume, operating expenditures, capital structure, growth rates and discount rate that reflect risk of water business and country risk premium.

Defined retirement benefit obligations

The present value of the retirement benefit obligations depends on a number of assumptions. Key assumptions used and impacts from possible changes in key assumptions are disclosed in Note 20.

Determination of lease terms

The Group considers all facts and circumstances that create an economic incentive to exercise an extension option, or not exercise a termination option. The Group includes extension options (or periods after termination option) in the lease term if the lease is reasonably certain to be extended (or not terminated).

For leases of properties, the most relevant factors are historical lease durations, the costs and conditions of leased assets.

Most extension options on offices and vehicles leases have not been included in the lease liability, because the Group considers i) the underlying asset condition and/or ii) insignificant cost to replace the leased assets.

The lease term is reassessed if an option is actually exercised (or not exercised) or the Group becomes obliged to exercise or not exercise such term. The assessment of reasonable certainty is only revised if a significant event or a significant change in circumstance affecting this assessment occur, and that it is within the control of the Group.

Determination of discount rate applied to leases

The Group determines the incremental borrowing rate as follows:

- Where possible, use recent third-party financing received by the individual lessee as a starting point, adjusting to reflect changes in its financing conditions.
- Make adjustments specific to the lease, e.g. term, country, currency and security.
-

Impairment of financial assets

The loss allowances for financial assets are based on assumptions about default risk and expected loss rates. The Group uses judgement in making these assumptions and selects the inputs used in the impairment calculation, based on the Group's past history and existing market conditions, as well as forward-looking estimates at the end of each reporting period.

Fair value of provision from water business

The Group estimates the liabilities from water business according to the strategic partnership agreement and production and distribution license agreements for industrial water operations and wastewater treatment by determining the demand of sales and services, price and other relevant factors. The Group uses future cashflows expected to pay under the agreements and discount rate which reflects the related risk.

7 Segment information

The Group's strategic steering committee, consisting of Board of Directors, considers the Group's performance both from a product and geographic perspective and has identified 4 reportable segments.

Incomes and profits information by business segment are as follows:

	2022					2021				
	Domestic		Overseas		Total Baht	Domestic		Overseas		Total Baht
	Water business Baht	Power business Baht	Water business Baht	Holding Company Baht		Water business Baht	Power business Baht	Water business Baht	Holding Company Baht	
Revenues from sales	1,856,164,016	97,948,474	4,811,700	-	1,958,924,190	1,751,718,419	85,216,016	1,420,572	-	1,838,355,007
Revenues from leases and services	253,470,150	230,365,577	209,036	-	484,044,763	175,565,652	166,230,277	668,601	-	342,464,530
Total revenues	2,109,634,166	328,314,051	5,020,736	-	2,442,968,953	1,927,284,071	251,446,293	2,089,173	-	2,180,819,537
Profit (loss) from operations	453,126,862	94,688,736	(11,835,578)	(7,164,005)	528,816,015	433,789,587	36,636,427	(7,682,460)	(11,353,994)	451,389,560
Other income	6,271,896	88,625,443	243,636	226,217	95,367,192	6,019,086	77,701,048	21,888	53,530	83,795,552
Gain (loss) from exchange rate	21,053	30,010,932	(1,419,726)	104,440,250	133,052,509	-	(978,380)	13,811,348	293,731,138	306,564,106
Finance costs	(106,004,454)	(230,486,533)	(76,651,627)	-	(413,142,614)	(116,155,233)	(197,045,839)	(96,115,477)	-	(409,316,549)
Share of profit (loss) from associates and joint ventures	(1,159,483)	366,435,379	(209,403,009)	-	155,872,887	(52,626)	521,429,962	(204,037,893)	-	317,339,443
Income tax (expense) benefit	(31,573,956)	(13,862,670)	(1,223,805)	837,198	(45,823,233)	(6,892,495)	(3,758,511)	(2,856,858)	(750,744)	(14,258,608)
Profit (loss) for the year	320,681,918	335,411,287	(300,290,109)	98,339,660	454,142,756	316,708,319	433,984,707	(296,859,452)	281,679,930	735,513,504
Profit attributable to non-controlling interests					5					(6)
Profit attributable to the owners of the parent					454,142,761					735,513,498
Segment depreciation and amortisation	267,262,841	95,324,041	4,800,702	-	367,387,584	246,603,627	73,903,810	2,283,642	-	322,791,079

Assets and liabilities information by business segment are as following:

	2022						2021					
	Domestic			Overseas			Domestic			Overseas		
	Water business Baht	Power business Baht	Water business Baht	Holding Company Baht	Total Baht		Water business Baht	Power business Baht	Water business Baht	Holding Company Baht	Total Baht	
Non-current assets	6,764,157,371	17,199,192,477	2,357,003,864	501,274	26,320,854,986		6,526,348,574	15,431,831,473	2,516,740,427	243,585	24,475,164,059	
Other assets	853,071,781	411,116,305	29,882,363	30,467,568	1,324,538,017		993,388,804	303,257,949	45,941,993	21,062,121	1,363,650,867	
Total assets	7,617,229,152	17,610,308,782	2,386,886,227	30,968,842	27,645,393,003		7,519,737,378	15,735,089,422	2,562,682,420	21,305,706	25,838,814,926	
Total liabilities	5,188,571,874	7,098,612,342	2,736,023,674	760,480	15,023,968,370		5,497,719,156	5,311,971,561	2,642,169,826	3,028,300	13,454,888,843	

Non-current assets presented above represent non-current assets other than financial instruments and deferred tax assets.

8 Cash and cash equivalents

	Consolidated financial statements		Separate financial statements	
	2022 Baht	2021 Baht	2022 Baht	2021 Baht
Cash on hand	746,285	296,699	172,272	230,537
Short-term bank deposits	720,457,404	904,215,490	415,891,816	544,956,449
Total	721,203,689	904,512,189	416,064,088	545,186,986

The interest rates on deposits are as follows:

	Consolidated financial statements		Separate financial statements	
	2022 Percentage	2021 Percentage	2022 Percentage	2021 Percentage
Short-term bank deposits	0.18 - 0.45	0.05 - 0.25	0.18 - 0.45	0.05 - 0.25

9 Trade and other receivables

	Consolidated financial statements		Separate financial statements	
	2022 Baht	2021 Baht	2022 Baht	2021 Baht
Trade receivables	188,616,005	178,502,068	93,873,159	109,602,840
Trade receivables - related parties (Note 27)	25,692,853	22,707,514	75,389,307	69,194,968
<u>Less</u> Expected credit loss	<u>(1,166,639)</u>	<u>(11,227,515)</u>	<u>(1,166,639)</u>	<u>(11,227,515)</u>
Trade receivables, net	213,142,219	189,982,067	168,095,827	167,570,293
Other receivables - related parties (Note 27)	2,556,341	2,298,029	441,885,528	299,032,050
Prepaid expenses	26,569,573	8,629,614	10,717,656	5,773,621
Accrued income	162,236,419	82,532,704	87,709,148	51,509,342
Others	96,444	12,001,730	42,425	524,375
Total	404,600,996	295,444,144	708,450,584	524,409,681

Due to the short-term nature of the current receivables, their carrying amount is approximate their fair value.

Impairments of trade receivables

The detail of expected credit loss for trade receivables were as follows:

	Consolidated financial statements			
	2022		2021	
	Trade receivables and amounts due from related parties Baht	Expected credit loss Baht	Trade receivables and amounts due from related parties Baht	Expected credit loss Baht
Within due	191,242,884	(93,765)	158,624,477	(10,772)
Overdue				
Up to 3 months	21,765,171	(9,029)	31,405,174	(38,433)
3 - 6 months	238,764	(1,806)	3,354	(1,733)
6 - 12 months	-	-	1,139,238	(1,139,238)
Over 12 months	1,062,039	(1,062,039)	10,037,339	(10,037,339)
Total	214,308,858	(1,166,639)	201,209,582	(11,227,515)
	Separate financial statements			
	2022		2021	
	Trade receivables and amounts due from related parties Baht	Expected credit loss Baht	Trade receivables and amounts due from related parties Baht	Expected credit loss Baht
Within due	149,209,483	(93,765)	141,188,187	(10,772)
Overdue				
Up to 3 months	18,985,470	(9,029)	26,429,690	(38,433)
3 - 6 months	5,474	(1,806)	3,354	(1,733)
6 - 12 months	-	-	1,139,238	(1,139,238)
Over 12 months	1,062,039	(1,062,039)	10,037,339	(10,037,339)
Total	169,262,466	(1,166,639)	178,797,808	(11,227,515)

The reconciliations of expected credit loss for trade receivables are as follow:

	Consolidated financial statements		Separate financial statements	
	2022 Baht	2021 Baht	2022 Baht	2021 Baht
Opening balance	11,227,515	12,418,410	11,227,515	12,418,410
Increase in expected credit loss recognised in profit or loss	(10,060,876)	(1,190,895)	(10,060,876)	(1,190,895)
Closing balance	1,166,639	11,227,515	1,166,639	11,227,515

10 Financial assets and financial liabilities

The Group and the Company have financial instruments as follows:

	Consolidated financial statements		Separate financial statements	
	2022 Baht	2021 Baht	2022 Baht	2021 Baht
Assets				
Current assets				
Financial assets at amortised cost				
Cash and cash equivalents	721,203,689	904,512,189	416,064,088	545,186,986
Trade and other receivables	377,866,377	286,789,852	697,592,559	518,636,061
Short-term loans to related parties	-	5,327,207	560,000,000	590,000,000
Non-current assets				
Financial assets at fair value through profit or loss				
Unquoted equity investments	331,579,089	308,122,355	-	-
Financial assets at amortised cost				
Long-term loans to related parties	225,490,552	248,490,552	6,540,250,520	5,533,490,000
Finance lease receivables	21,222,092	21,512,704	-	-
Liabilities				
Current liabilities				
Financial liabilities at fair value through other comprehensive income				
Current portion of provision for liabilities from water business	36,384,614	35,063,390	35,914,904	34,945,751
Financial liabilities at fair value through profit or loss				
Derivative liabilities	8,242,323	-	-	-
Liabilities at amortised cost				
Short-term loans	1,599,904,548	999,920,268	1,599,904,548	999,920,268
Trade and other payables	441,539,035	457,425,456	241,881,707	302,230,256
Current portion of long-term loans	-	1,999,332,533	-	1,999,332,533
Current portion of debentures	2,789,187,762	1,499,345,625	2,789,187,762	1,499,345,625
Current portion of lease liabilities	13,477,861	11,645,272	11,150,541	10,490,055
Non-current liabilities				
Financial liabilities at fair value through other comprehensive income				
Provision for liabilities from water business	388,698,243	389,950,283	384,096,619	386,254,204
Liabilities at amortised cost				
Debentures	9,110,728,368	7,602,308,230	9,110,728,368	7,602,308,230
Lease liabilities	412,169,690	278,502,538	277,084,806	175,054,781
Other non-current liabilities	25,618,715	18,139,155	24,848,533	17,425,355

Due to the current nature of the current portion of financial assets and liabilities measured at amortised cost, their carrying amount is considered approximate their fair value. For the non-current financial liabilities, the fair values are disclosed in relevant notes.

The fair values of forward foreign exchange contracts is determined using forward exchange rates that are quoted in an active market are within level 2 of the fair value hierarchy.

The fair values of unquoted equity investments and provision for liabilities from water business are within level 3 of the fair value hierarchy.

Management and valuation teams discuss valuation processes and results quarterly.

Fair value of unquoted equity investments is determined using cash flow projections based on financial budgets approved by management covering the period of the purchase power agreement.

Fair value of provision for liabilities from water business is determined using pre-tax cash flow projections based on five years financial budgets approved by management. Cash flows more than five years period are extrapolated using the estimated growth rates that does not exceed the long-term average growth rate of the water business operation.

The following table summarises the quantitative information about the significant unobservable inputs used in level 3 fair value measurements and relationship of unobservable inputs to fair value.

	Range of inputs	Movement	Change in fair value	
			Increase in inputs	Decrease in inputs
Consolidated financial statements				
Unquoted equity investments				
Risk adjusted discount rate	5%	1%	Decrease by 3%	Increase by 3%
Provision for liabilities				
Risk adjusted discount rate	10%	1%	Decrease by 8%	Increase by 10%
Separate financial statements				
Provision for liabilities				
Risk adjusted discount rate	10%	1%	Decrease by 8%	Increase by 10%

Amounts recognised in profit or loss and other comprehensive income

	Consolidated financial statements		Separate financial statements	
	2022 Baht	2021 Baht	2022 Baht	2021 Baht
Recognised in profit or loss				
Fair value gain (losses) on equity investments at FVPL	23,456,735	(20,650,163)	-	-
Recognised in other comprehensive income				
Fair value gain (losses) on change in provision for liabilities at FVPL	6,480,761	(70,367,367)	7,497,262	(75,859,717)

11 Interests in associates and joint ventures

The material investments in associates and joint ventures are as follows:

Entity name	Country of incorporation	Nature of business	% of ownership interest		Consolidated financial statements		Separate financial statements	
					Investment at equity method		Investment at cost method	
			2022 %	2021 %	2022 Million Baht	2021 Million Baht	2022 Million Baht	2021 Million Baht
Material associates:								
GHECO - One Company Limited	Thailand	Power plant operation and sale of electricity	35	35	7,568	7,328	-	-
Duong River Surface Water Plant Joint Stock Company	Vietnam	Production and distribution of water supply	34	34	2,174	2,382	-	-
Immaterial associates					3,660	3,133	-	-
Total					13,402	12,843	-	-
Joint ventures:								
Immaterial joint ventures					918	845	159	159
Total					918	845	159	159

The Group has contingent liabilities relating to guarantee of associates' loans by using the ordinary shares of such associates and guarantee of associates' and joint ventures' bank guarantees facilities by subsidiaries which are shareholders of such associates and joint ventures.

The impairment testing for investment in associate

During the year ended 31 December 2022, the management assessed that there were the impairment indicators of investments in the associate that were the accumulated operation losses and the carrying value of investment recognised at cost in the subsidiary's financial statement was higher than its net equity value, including goodwill, at the consolidated level. The management performed the impairment testing of investment in the associate by determining the recoverable amount based on the fair value less costs of disposal by discounting future cash flow from continuing operation. The calculation of the recoverable amounts involves management's significant judgements in the assumptions applied, which are the estimated water selling price per cubic metre, estimated sale volume, operating expenditures, capital structure, growth rates and discount rate that reflect risk of water business and country risk premium.

From a result of the impairment testing by the management, the recoverable amount higher than the carrying amount. As a result there was no recognition of impairment for investment in the associate for the year ended 31 December 2022.

The significant movement of the interests in joint ventures during the year ended 31 December 2022:

Stella Power One Company Limited and Stella Power Two Company Limited

On 13 November 2022, WHA Solar Company Limited, the subsidiary of the Company, entered into the shareholder agreement with Athena Power Company Limited to invest in Stella Power One Company Limited and Stella Power Two Company Limited in the proportion of 51% of authorised share capital. The principal business operations of these two companies are to operate solar power business. Subsequently, on 21 November 2022, these two companies registered to increase their share capital and the Group paid for additional share capital in the same proportion as their original investments. For the year ended 31 December 2022, the Group paid a total of Baht 56.09 million for the investments in Stella Power One Company Limited and Baht 49.08 million for the investments in Stella Power Two Company Limited.

Summarised financial information for associates

The table below summarised the financial information of associates that are material to the Group. The financial information is included in associates own financial statements which has been amended to reflect adjustments necessary for the equity method, including adjusting fair value and differences in accounting policy.

	GHECO - One Company Limited		Duong River Surface Water Plant Joint Stock Company	
	2022 Baht	2021 Baht	2022 Baht	2021 Baht
<i>Summarised of performance</i>				
Revenue	15,954,427,487	8,343,739,078	482,073,058	357,326,647
Loss before income tax	(13,808,052)	(168,713,128)	(594,593,177)	(554,207,862)
Income tax (expense) benefit	88,064,175	(11,506,533)	5,913,624	5,132,165
Profit (Loss) for the year	74,256,123	(180,219,661)	(588,679,553)	(549,075,697)
Other comprehensive income (loss)	614,114,966	488,549,948	(21,252,829)	558,089,462
Total comprehensive income (loss)	688,371,089	308,330,287	(609,932,382)	9,013,765
Dividends received from associate	-	104,964,719	-	-
<i>Summarised of statement of financial position</i>				
Current assets	10,001,369,796	7,092,051,487	242,236,511	376,472,596
Non-current assets	30,077,381,681	31,300,141,030	10,718,501,147	11,112,426,812
Current liabilities	(5,113,461,866)	(2,420,652,494)	(804,368,374)	(708,831,942)
Non-current liabilities	(13,341,137,461)	(15,035,758,958)	(6,150,565,665)	(6,195,854,702)
Net assets	21,624,152,150	20,935,781,065	4,005,803,619	4,584,212,764
Group's portion in associates	35%	35%	34%	34%
Group's share in associates	7,568,453,253	7,327,523,373	1,361,973,230	1,558,632,340
Goodwill	-	-	812,508,355	823,226,254
Associates carrying amount	7,568,453,253	7,327,523,373	2,174,481,585	2,381,858,594

Individually immaterial associates and joint ventures

The table below is the carrying amount of the Group's interests, in aggregate, all individually immaterial associates and joint ventures that are accounted using equity method.

	2022 Baht	2021 Baht
Aggregate carrying amount of individually immaterial associates	3,659,416,599	3,134,096,760
The Group's share of:		
Profit for the year	290,609,808	499,825,930
Other comprehensive income	503,615,664	315,572,977
Total comprehensive income	794,225,472	815,398,907
Aggregate carrying amount of individually immaterial joint ventures	918,340,172	844,749,065
The Group's share of:		
Profit for the year	39,424,483	67,276,132
Other comprehensive income	7,458,793	22,137,604
Total comprehensive income	46,883,276	89,413,736

12 Investments in subsidiaries

The subsidiaries included in consolidated financial statement. The subsidiaries have only ordinary shares. The proportion of ownership interests held by the Group is equal to voting rights in subsidiaries held by the Group.

The material investments in subsidiaries are as follows:

Entity name	Country of incorporation	Nature of business	Ownership interest held by Company		Ownership interest held by the Group		Ownership interests held by non-controlling interests		Investment at cost method	
			2022	2021	2022	2021	2022	2021	2022	2021
			%	%	%	%	%	%	Million Baht	Million Baht
WHA Water Company Limited	Thailand	Water resources, development and management	100	100	-	-	-	-	301	301
WHA Energy Company Limited	Thailand	Holding company	100	100	-	-	-	-	9,178	9,178
WHA Energy 2 Company Limited	Thailand	Holding company	-	-	100	100	-	-	7,270	7,270
WHA Solar Company Limited	Thailand	Power plant operation and sale of electricity	-	-	100	100	-	-	750	750

13 Property, plant and equipment

	Consolidated financial statements																							
	Right-of-use land		Building improvements		Buildings and structure		Tools		Equipment, furniture and fixtures		Vehicles		Raw water pipes		Industrial water production systems		Waste water treatment systems		Solar systems		Construction in progress		Total	
	Baht		Baht		Baht		Baht		Baht		Baht		Baht		Baht		Baht		Baht		Baht		Baht	
As at 1 January 2021																								
Cost	215,519,079		36,211,083		276,191,180		172,017,458		15,522,509		11,932,142		2,365,632,419		1,180,139,975		347,402,055		938,578,140		490,873,447		6,050,019,487	
Less: Accumulated depreciation	(5,945,207)		(13,548,199)		(56,217,903)		(91,234,219)		(9,017,417)		(3,948,640)		(504,412,949)		(241,142,914)		(44,039,232)		(41,507,198)		-		(1,011,013,878)	
Net book amount	209,573,872		22,662,884		219,973,277		80,783,239		6,505,092		7,983,502		1,861,219,470		938,997,061		303,362,823		897,070,942		490,873,447		5,039,005,609	
For the year ended 31 December 2021																								
Opening net book amount	209,573,872		22,662,884		219,973,277		80,783,239		6,505,092		7,983,502		1,861,219,470		938,997,061		303,362,823		897,070,942		490,873,447		5,039,005,609	
Additions	69,669,570		24,600,645		-		10,653,221		858,831		3,163,663		7,341,608		-		11,992,830		184,140		598,016,429		726,480,937	
Transfers	-		-		328,120		4,968,824		-		-		38,551,531		235,023,671		-		328,193,168		(607,065,314)		-	
Disposals	(36,983,881)		-		-		(8,747)		(1,110,778)		(102,522)		(836,691)		-		-		-		-		(39,042,619)	
Adjustment	-		-		-		-		-		-		-		-		-		(957,500)		-		(957,500)	
Depreciation Charge	(6,535,980)		(10,851,405)		(9,449,596)		(11,664,242)		(2,317,858)		(3,288,879)		(97,344,870)		(47,240,012)		(12,380,453)		(74,314,563)		-		(275,387,858)	
Currency translation differences	-		-		559,402		1,381,081		14,942		-		1,994,886		673,659		-		-		-		4,623,970	
Closing net book amount	235,723,581		36,412,124		211,411,203		86,113,376		3,950,229		7,755,764		1,810,925,934		1,127,454,379		302,975,200		1,150,176,187		481,824,562		5,454,722,539	
As at 31 December 2021																								
Cost	246,643,980		59,899,396		277,103,425		189,096,498		11,916,108		12,133,925		2,412,677,898		1,415,866,871		359,394,885		1,265,997,948		481,824,562		6,732,555,496	
Less: Accumulated depreciation	(10,920,399)		(23,487,272)		(65,692,222)		(102,983,122)		(7,965,879)		(4,378,161)		(601,751,964)		(288,412,492)		(56,419,685)		(115,821,761)		-		(1,277,832,957)	
Net book amount	235,723,581		36,412,124		211,411,203		86,113,376		3,950,229		7,755,764		1,810,925,934		1,127,454,379		302,975,200		1,150,176,187		481,824,562		5,454,722,539	
For the year ended 31 December 2022																								
Opening net book amount	235,723,581		36,412,124		211,411,203		86,113,376		3,950,229		7,755,764		1,810,925,934		1,127,454,379		302,975,200		1,150,176,187		481,824,562		5,454,722,539	
Additions	126,765,518		20,926,959		-		15,047,088		1,550,557		-		8,814,745		927,577		-		111,560		1,339,241,729		1,513,385,733	
Transfers	-		924,844		(11,418)		1,556,567		-		-		230,094,559		143,875,440		121,805,613		517,261,146		(1,015,506,751)		-	
Disposals	-		-		-		-		(57,839)		-		-		-		-		-		-		(57,839)	
Depreciation charge	(11,625,153)		(11,696,299)		(9,470,256)		(13,809,660)		(1,987,146)		(2,659,052)		(101,106,888)		(56,013,287)		(16,035,618)		(95,305,505)		-		(319,708,864)	
Currency translation differences	-		-		2,465		18,485		1,789		-		(4,309)		3,283		(2,945,044)		-		-		(2,923,331)	
Closing net book amount	350,863,946		46,567,628		201,931,994		88,925,856		3,457,590		5,096,712		1,948,724,041		1,216,247,392		405,800,151		1,572,243,388		805,559,540		6,645,418,238	
As at 31 December 2022																								
Cost	373,409,498		68,933,752		277,087,397		205,692,392		12,540,440		12,133,925		2,651,560,769		1,560,665,652		478,170,478		1,783,370,654		805,559,540		8,229,124,497	
Less: Accumulated depreciation	(22,545,552)		(22,366,124)		(75,155,403)		(116,766,536)		(9,082,850)		(7,037,213)		(702,836,728)		(344,418,260)		(72,370,327)		(211,127,266)		-		(1,583,706,259)	
Net book amount	350,863,946		46,567,628		201,931,994		88,925,856		3,457,590		5,096,712		1,948,724,041		1,216,247,392		405,800,151		1,572,243,388		805,559,540		6,645,418,238	

	Separate financial statements																					
	Right-of-use land		Building improvements		Buildings and structure		Tools		Equipment, furniture and fixtures		Vehicles		Raw water pipes		Industrial water production systems		Waste water treatment systems		Construction in progress		Total	
	Baht		Baht		Baht		Baht		Baht		Baht		Baht		Baht		Baht		Baht		Baht	
As at 1 January 2021																						
Cost	152,146,409		29,882,216		271,273,919		157,160,563		15,296,969		11,932,142		2,154,352,465		709,289,323		315,759,880		13,606,665		3,830,700,551	
Less Accumulated depreciation	(3,250,933)		(13,214,886)		(56,086,119)		(87,021,883)		(8,982,914)		(3,948,640)		(489,074,541)		(132,405,628)		(43,228,808)		-		(837,214,352)	
Net book amount	148,895,476		16,667,330		215,187,800		70,138,680		6,314,055		7,983,502		1,665,277,924		576,883,695		272,531,072		13,606,665		2,993,486,199	
For the year ended 31 December 2021																						
Opening net book amount	148,895,476		16,667,330		215,187,800		70,138,680		6,314,055		7,983,502		1,665,277,924		576,883,695		272,531,072		13,606,665		2,993,486,199	
Additions	34,213,696		24,600,645		-		7,650,402		808,492		3,163,663		5,553,844		-		11,992,830		124,406,848		212,390,420	
Transfers	-		-		-		-		-		-		9,785,000		-		-		(9,785,000)		-	
Disposals	(36,983,881)		-		-		(8,747)		(1,110,778)		(102,522)		-		-		-		-		(38,205,928)	
Depreciation charge	(3,298,089)		(10,502,761)		(9,152,668)		(9,850,588)		(2,239,917)		(3,288,879)		(87,912,570)		(25,733,453)		(11,325,714)		-		(163,304,639)	
Closing net book amount	142,827,202		30,765,214		206,035,132		67,929,747		3,771,852		7,755,764		1,592,704,198		551,150,242		273,198,188		128,228,513		3,004,366,052	
As at 31 December 2021																						
Cost	147,815,436		53,570,529		271,273,919		164,798,465		11,615,971		12,133,925		2,169,691,309		709,289,323		327,752,710		128,228,513		3,996,170,100	
Less Accumulated depreciation	(4,988,234)		(22,805,315)		(65,238,787)		(96,868,718)		(7,844,119)		(4,378,161)		(576,987,111)		(158,139,081)		(54,554,522)		-		(991,804,048)	
Net book amount	142,827,202		30,765,214		206,035,132		67,929,747		3,771,852		7,755,764		1,592,704,198		551,150,242		273,198,188		128,228,513		3,004,366,052	
For the year ended 31 December 2022																						
Opening net book amount	142,827,202		30,765,214		206,035,132		67,929,747		3,771,852		7,755,764		1,592,704,198		551,150,242		273,198,188		128,228,513		3,004,366,052	
Additions	98,855,479		14,614,915		-		13,403,997		1,527,293		-		8,604,144		927,577		-		290,081,529		428,014,934	
Transfers	-		924,844		-		1,174,550		-		-		223,944,870		143,875,440		43,630,178		(413,549,882)		-	
Disposals	-		-		-		-		(57,839)		-		-		-		-		-		(57,839)	
Depreciation charge	(6,212,482)		(10,916,879)		(9,152,668)		(11,080,660)		(1,892,338)		(2,659,052)		(91,204,795)		(32,720,008)		(12,766,373)		-		(178,605,255)	
Closing net book amount	235,470,199		35,388,094		196,882,464		71,427,634		3,348,968		5,096,712		1,734,048,417		663,233,251		304,061,993		4,760,160		3,253,717,892	
As at 31 December 2022																						
Cost	246,670,915		56,292,842		271,273,919		179,377,012		12,217,208		12,133,925		2,402,240,323		854,092,340		371,382,888		4,760,160		4,410,441,532	
Less Accumulated depreciation	(11,200,716)		(20,904,748)		(74,391,455)		(107,949,378)		(8,868,240)		(7,037,213)		(668,191,906)		(190,859,089)		(67,320,895)		-		(1,156,723,640)	
Net book amount	235,470,199		35,388,094		196,882,464		71,427,634		3,348,968		5,096,712		1,734,048,417		663,233,251		304,061,993		4,760,160		3,253,717,892	

Borrowing costs were capitalised during the year and are included in 'additions' as follows:

	Consolidated financial statements		Separate financial statements	
	2022 Baht	2021 Baht	2022 Baht	2021 Baht
Borrowing costs	13,387,242	3,972,132	-	-
Capitalisation rate	2.74%	2.81%	-	-

The Group and the Company has right-of-use assets for the leases that are classified as property, plant and equipment as follows:

	Consolidated financial statements		Separate financial statements	
	2022 Baht	2021 Baht	2022 Baht	2021 Baht
Right-of-use land	350,863,946	235,723,581	235,470,199	142,827,202
Building improvements	40,947,744	30,147,664	30,004,364	24,673,750
Vehicles	5,096,713	7,755,764	5,096,713	7,755,764
Total	396,908,403	273,627,009	270,571,276	175,256,716

The additions to the right-of-use assets that are included in the property, plant and equipment in consolidated and separate financial statements were Baht 146,506,338 and Baht 112,434,255 (2021: Baht 96,986,523 and Baht 61,530,649), respectively.

Amounts that are related to leases of property, plant and equipment are as follows:

	Consolidated financial statements		Separate financial statements	
	2022 Baht	2021 Baht	2022 Baht	2021 Baht
Expense relating to leases of low-value assets	3,024,475	3,212,643	2,937,740	2,993,360
Total cash outflow for leases	36,124,013	27,753,229	28,027,535	22,187,641

	Consolidated financial statements		
	Right to operate and distribute the industrial water and to provide waste water treatment service Baht	Computer software and water plant maintenance program Baht	Total Baht
At 1 January 2021			
Cost	2,269,769,461	4,745,809	2,274,515,270
<u>Less</u> Accumulated amortisation	(282,878,604)	(3,724,276)	(286,602,880)
Net book amount	1,986,890,857	1,021,533	1,987,912,390
For the year ended 31 December 2021			
Opening net book amount	1,986,890,857	1,021,533	1,987,912,390
Additions	-	5,203,445	5,203,445
Amortisation charge	(46,466,500)	(936,723)	(47,403,223)
Closing net book amount	1,940,424,357	5,288,255	1,945,712,612
At 31 December 2021			
Cost	2,269,769,461	9,949,254	2,279,718,715
<u>Less</u> Accumulated amortisation	(329,345,104)	(4,660,999)	(334,006,103)
Net book amount	1,940,424,357	5,288,255	1,945,712,612
For the year ended 31 December 2022			
Opening net book amount	1,940,424,357	5,288,255	1,945,712,612
Additions	-	9,703,730	9,703,730
Amortisation charge	(46,466,499)	(1,212,221)	(47,678,720)
Closing net book amount	1,893,957,858	13,779,764	1,907,737,622
At 31 December 2022			
Cost	2,269,769,461	19,652,984	2,289,422,445
<u>Less</u> Accumulated amortisation	(375,811,603)	(5,873,220)	(381,684,823)
Net book amount	1,893,957,858	13,779,764	1,907,737,622

	Separate financial statements		
	Right to operate and distribute the industrial water and to provide waste water treatment service Baht	Computer software and water plant maintenance program Baht	Total Baht
At 1 January 2021			
Cost	2,226,155,408	4,735,300	2,230,890,708
<u>Less</u> Accumulated amortisation	(282,147,321)	(3,723,071)	(285,870,392)
Net book amount	1,944,008,087	1,012,229	1,945,020,316
For the year ended 31 December 2021			
Opening net book amount	1,944,008,087	1,012,229	1,945,020,316
Additions	-	2,224,319	2,224,319
Amortisation charge	(45,594,219)	(826,400)	(46,420,619)
Closing net book amount	1,898,413,868	2,410,148	1,900,824,016
At 31 December 2021			
Cost	2,226,155,408	6,959,619	2,233,115,027
<u>Less</u> Accumulated amortisation	(327,741,540)	(4,549,471)	(332,291,011)
Net book amount	1,898,413,868	2,410,148	1,900,824,016
For the year ended 31 December 2022			
Opening net book amount	1,898,413,868	2,410,148	1,900,824,016
Additions	-	9,355,235	9,355,235
Amortisation charge	(45,594,218)	(915,619)	(46,509,837)
Closing net book amount	1,852,819,650	10,849,764	1,863,669,414
At 31 December 2022			
Cost	2,226,155,408	16,314,854	2,242,470,262
<u>Less</u> Accumulated amortisation	(373,335,758)	(5,465,090)	(378,800,848)
Net book amount	1,852,819,650	10,849,764	1,863,669,414

15 Goodwill

Goodwill is allocated to the Group's cash-generating units (CGUs) identified according to business segment as follows:

	Consolidated financial statements		Separate financial statements	
	2022 Baht	2021 Baht	2022 Baht	2021 Baht
Power business	2,162,207,653	2,162,207,653	-	-
Water business	610,669,873	610,669,873	597,693,413	597,693,413
Total	2,772,877,526	2,772,877,526	597,693,413	597,693,413

The recoverable amount of a CGU is determined based on fair value less costs of disposal calculations by using a present value techniques that are within level 3 of the fair value hierarchy. These calculations use cash flow projections based on financial budgets approved by management covering a five-year period. Cash flows more than the five-year period are extrapolated using the estimated growth rates that does not exceed the long-term average growth rate for the business in which the CGU operates.

The key assumptions used for fair value less costs of disposal calculations are as follows:

	Power Percentage	Water Percentage
Growth rate	(3.2)	0.4
Discount rate	5.2	3.9

Management determined budgeted gross margin based on past performance and its expectations of market development. The weighted average growth rates used are consistent with the forecasts included in industry reports. The discount rates used reflect specific risks relating to the relevant segments.

The recoverable amount will be equal to the carrying amount if the key assumptions used for fair value less costs of disposal changes to be as follows:

	Power Percentage	Water Percentage
Growth rate	(4.7)	(6.2)
Discount rate	6.9	7.3

16 Deferred income tax

As at 31 December 2022 and 2021, deferred tax assets and deferred tax liabilities presented by net taxable entities comprised the following:

	Consolidated financial statements		Separate financial statements	
	2022 Baht	2021 Baht	2022 Baht	2021 Baht
Deferred income tax assets	3,789,987	758,644	-	-
Deferred income tax liabilities	(80,868,873)	(89,809,248)	(36,185,748)	(49,671,857)
Total	(77,078,886)	(89,050,604)	(36,185,748)	(49,671,857)

Deferred tax assets (liabilities), net as at 31 December 2022 and 2021 comprised the following:

	Consolidated financial statements		Separate financial statements	
	2022 Baht	2021 Baht	2022 Baht	2021 Baht
Deferred income tax assets	655,709,265	636,369,815	626,062,019	614,883,660
Deferred income tax liabilities	(732,788,151)	(725,420,419)	(662,247,767)	(664,555,517)
Total	(77,078,886)	(89,050,604)	(36,185,748)	(49,671,857)

The movements in deferred income tax assets and liabilities during the year is as follows:

	Consolidated financial statements					
	As at		Recognised		Recognised	
	1 January 2021 Baht	Recognised to profit or loss Baht	to other comprehensive income Baht	As at 31 December 2021 Baht	to profit or loss Baht	to other comprehensive income Baht
Deferred income tax assets						
Derivative liabilities	-	-	-	-	1,648,465	-
Net impairment losses on financial assets	2,483,682	(238,179)	-	2,245,503	(2,012,175)	-
Cash received in advance	534,962	(246,594)	-	288,368	4,453,406	-
Provision for repair and maintenance	362,050	(362,050)	-	-	-	-
Lease liability	48,457,673	9,374,706	-	57,832,379	26,799,205	-
Cash paid for transfer of water business	496,603,858	(10,976,000)	-	485,627,858	(10,976,000)	-
Provision liabilities from water business	69,542,225	1,387,036	14,073,473	85,002,734	1,309,989	(1,296,152)
Employee benefit obligations	4,514,019	858,954	-	5,372,973	752,543	(1,339,831)
	622,498,469	(202,127)	14,073,473	636,369,815	21,975,433	(2,635,983)
						655,709,265
Deferred income tax liabilities						
Financial assets measured at fair value through profit or loss	(37,254,502)	4,130,036	-	(33,124,466)	(4,691,347)	-
Depreciation	(282,211,355)	14,255,409	-	(267,955,946)	14,211,468	-
Right-of-use asset	(45,932,402)	(8,457,280)	-	(54,389,682)	(24,221,503)	-
Right to operate and distribute industrial water and waste management	(375,655,315)	7,554,900	-	(368,100,415)	7,554,900	-
Debtenture underwriting fees	(1,344,134)	(373,135)	-	(1,717,269)	(353,891)	-
Interest paid on loans	(461,794)	329,153	-	(132,641)	132,641	-
	(742,859,502)	17,439,083	-	(725,420,419)	(7,367,732)	-
						(732,788,151)
Deferred income tax, net	(120,361,033)	17,236,956	14,073,473	(89,050,604)	14,607,701	(2,635,983)
						(77,078,886)

Separate financial statements							
	As at 1 January 2021 Baht	Recognised to profit or loss Baht	Recognised to other comprehensive income Baht	As at 31 December 2021 Baht	Recognised to profit or loss Baht	Recognised to other comprehensive income Baht	As at 31 December 2022 Baht
Deferred income tax assets							
Net impairment losses on financial assets	2,483,682	(238,179)	-	2,245,503	(2,012,175)	-	233,328
Cash received in advance	534,962	(246,594)	-	288,368	4,453,406	-	4,741,774
Provision for repair and maintenance	362,051	(362,051)	-	-	-	-	-
Lease liability	34,787,729	2,321,238	-	37,108,967	20,538,102	-	57,647,069
Cash paid for transfer of water business	496,603,858	(10,976,000)	-	485,627,858	(10,976,000)	-	474,651,858
Provision liabilities from water business	67,742,254	1,325,794	15,171,943	84,239,991	1,261,766	(1,499,452)	84,002,305
Employee benefit obligations	4,514,019	858,954	-	5,372,973	752,543	(1,339,831)	4,785,685
	607,028,555	(7,316,838)	15,171,943	614,883,660	14,017,642	(2,839,283)	626,062,019
Deferred income tax liabilities							
Depreciation	(282,211,355)	14,255,409	-	(267,955,946)	14,211,468	-	(253,744,478)
Right-of-use asset	(33,037,659)	(2,013,683)	-	(35,051,342)	(19,062,912)	-	(54,114,254)
Right to operate and distribute industrial water and waste management	(367,078,763)	7,380,444	-	(359,698,319)	7,380,444	-	(352,317,875)
Debtenture underwriting fee	(1,344,134)	(373,135)	-	(1,717,269)	(353,891)	-	(2,071,160)
Interest paid on loans	(461,794)	329,153	-	(132,641)	132,641	-	-
	(684,133,705)	19,578,188	-	(664,555,517)	2,307,750	-	(662,247,767)
Deferred income tax, net	(77,105,150)	12,261,350	15,171,943	(49,671,857)	16,325,392	(2,839,283)	(36,185,748)

Deferred income tax assets are recognised for tax loss carry forwards only to the extent that realisation of the related tax benefit through the future taxable profits is probable. The Group did not recognise deferred income tax assets in respect of losses that can be carried forward against future taxable income as follows:

	Consolidated financial statements		Separate financial statements	
	2022 Baht	2021 Baht	2022 Baht	2021 Baht
Unused tax loss carry forwards	189,352,248	222,602,286	-	8,749,907
Unrecognised deferred income tax	37,870,450	44,520,457	-	1,749,981
Expired year	2023-2027	2022-2026	-	2025

17 Loans and debentures

	Consolidated and separate financial statements	
	2022 Baht	2021 Baht
Current		
Short-term loans	1,599,904,548	999,920,268
Current portion of long-term loans	-	1,999,332,533
Current portion of debentures	2,789,187,762	1,499,345,625
	4,389,092,310	4,498,598,426
Non-current		
Debentures	9,110,728,368	7,602,308,230
	9,110,728,368	7,602,308,230
Total	13,499,820,678	12,100,906,656

The movements in loans and debentures from financing activities during the year are as follows:

	Consolidated and separate financial statements			
	Short-term loans Baht	Long-term loans Baht	Debentures Baht	Total Baht
Opening balance 2021	-	4,872,764,966	7,993,385,529	12,866,150,495
Cash flows in	3,300,000,000	-	3,500,000,000	6,800,000,000
Cash flows out	(2,303,305,890)	(2,875,000,000)	(2,394,877,000)	(7,573,182,890)
Amortisation of front-end fee	3,226,158	1,567,567	3,145,326	7,939,051
Closing balance 2021	999,920,268	1,999,332,533	9,101,653,855	12,100,906,656
Cash flows in	2,500,000,000	-	4,300,000,000	6,800,000,000
Cash flows out	(1,901,340,000)	(2,000,000,000)	(1,505,864,000)	(5,407,204,000)
Amortisation of front-end fee	1,324,280	667,467	4,126,275	6,118,022
Closing balance 2022	1,599,904,548	-	11,899,916,130	13,499,820,678

The carrying amounts and fair values of certain long-term loans and debentures are as follows:

	Consolidated and separate financial statements			
	Long-term loans		Debentures	
	2022 Baht	2021 Baht	2022 Baht	2021 Baht
Carrying amounts	-	1,999,332,533	11,899,916,130	9,101,653,855
Fair values	-	1,999,332,533	11,857,734,572	9,125,189,162

The fair value of current loans equal their carrying amount, as the impact of discounting is not significant.

The fair values of long-term loans are based on discounted cash flows using a discount rate based upon the loan rate of 2.90% and are within level 2 of the fair value hierarchy.

The fair values of debentures are based on clean price announced by Thai Bond Market Association that are within level 2 of the fair value hierarchy.

The proportion of loans and debentures of the Group and Company which have fixed rates are 100% (2021: 100%) of all loans.

The effective interest rates at the statements of financial position date were as follows:

	Consolidated and separate financial statements	
	2022	2021
	Percentage	Percentage
Long-term loans	-	2.90
Debentures	1.48 - 3.70	1.97 - 3.66

Maturity of long-term loans and debentures are as follows:

	Consolidated and separate financial statements			
	Long-term loans		Debentures	
	2022 Baht	2021 Baht	2022 Baht	2021 Baht
Not later than 1 year	-	1,999,332,533	2,789,187,762	1,499,345,625
Later than 1 year but not later than 5 years	-	-	7,612,165,872	6,103,921,606
Over 5 years	-	-	1,498,562,496	1,498,386,624
Total	-	1,999,332,533	11,899,916,130	9,101,653,855

18 Trade and other payables

	Consolidated financial statements		Separate financial statements	
	2022 Baht	2021 Baht	2022 Baht	2021 Baht
Trade payables	281,674,094	234,236,057	92,307,776	82,005,695
Amounts due to related parties (Note 27)	55,508,885	132,918,429	56,167,167	133,330,862
Accrued expenses	31,925,815	18,378,488	21,303,684	15,355,339
Accrued interests	71,174,387	71,254,148	71,174,387	71,254,148
Advance received income	33,441,777	1,441,843	23,708,874	1,441,843
Others	1,255,855	638,334	928,693	284,213
Total	474,980,813	458,867,299	265,590,581	303,672,100

19 Provision for liabilities from water business

Provision for liabilities from water business represents the annual license fees to be paid under the strategic partnership agreement and production and distribution license agreements for industrial water operations and wastewater treatment. The annual fees are calculated at 1% on the first three years since 30 March 2016 and 3% on the fourth to fiftieth year of revenue from water business before deduction of expenses over the contracts period.

Movements of provision for liabilities from water business are as follows:

	Consolidated financial statements		Separate financial statements	
	2022 Baht	2021 Baht	2022 Baht	2021 Baht
Opening balance	425,013,673	347,711,124	421,199,955	338,711,268
Additions (reduction) during the year	(6,480,761)	70,367,367	(7,497,262)	75,859,717
Payments during the year	(34,121,719)	(30,437,043)	(33,990,425)	(30,324,552)
Interest expense (Note 23)	40,671,664	37,372,224	40,299,255	36,953,522
Closing balance	425,082,857	425,013,673	420,011,523	421,199,955

20 Employee benefit obligations

The movements in the defined benefit obligation for the year are as follows:

	Consolidated and separate financial statements	
	2022 Baht	2021 Baht
Opening balance	26,864,865	22,570,095
Current service cost	3,322,383	3,856,250
Interest cost	440,335	438,520
Actuarial gain	(6,699,156)	-
Closing balance	23,928,427	26,864,865

The significant actuarial assumptions used were as follows:

	Consolidated and separate financial statements	
	2022 Percentage	2021 Percentage
Discount rate	2.22	1.98
Salary growth rate	6.00	5.50
Resignation rate	3.82 - 14.33	9.00 - 15.00
Retirement age	55 years	55 years

Sensitivity analysis for each significant assumption used is as follows:

	Consolidated and Separate financial statements					
	Impact on retirement benefits					
	Change in assumption		Increase in assumption		Decrease in assumption	
	2022	2021	2022	2021	2022	2021
Discount rate	1%	1%	Decrease by 7.36%	Decrease by 5.04%	Increase by 8.41%	Increase by 5.65%
Salary growth rate	1%	1%	Increase by 8.92%	Increase by 7.41%	Decrease by 7.95%	Decrease by 6.72%
Resignation rate	20%	1%	Decrease by 8.90%	Decrease by 5.45%	Increase by 10.51%	Increase by 2.98%

The above sensitivity analyses are based on a change in an assumption while holding all other assumptions constant. In practice, this is unlikely to occur, and changes in some of the assumptions may be correlated. When calculating the sensitivity of the employee benefit obligations to significant actuarial assumptions the same method has been applied as when calculating the employee benefit obligations recognised within the statement of financial position.

The methods and types of assumptions used in preparing the sensitivity analysis did not change compared to the previous year.

21 Dividend

At the Company's shareholder's meeting on 22 April 2022, the shareholders approved a dividend at Baht 0.16 per share amounting to a total of Baht 612 million. The Company paid dividend on 19 May 2022.

At the Company's Board of Directors' meeting on 11 November 2022, the Board of Directors approved an interim dividend at Baht 0.06 per share amounting to a total of Baht 229.50 million. The Company paid dividend on 7 December 2022.

At the Company's shareholder's meeting on 20 April 2021, the shareholders approved a dividend at Baht 0.16 per share amounting to a total of Baht 612 million. The Company paid dividend on 18 May 2021.

At the Company's Board of Directors' meeting on 12 November 2021, the Board of Directors approved an interim dividend at Baht 0.09 per share amounting to a total of Baht 354 million. The Company paid dividend on 8 December 2021.

22 Other income

	Consolidated financial statements		Separate financial statements	
	2022 Baht	2021 Baht	2022 Baht	2021 Baht
Dividend income	35,354,252	50,003,253	531,285,986	1,270,925,985
Interest income	14,533,143	13,026,289	190,671,971	179,235,980
Guarantee fee	16,115,723	16,952,638	-	-
Gain from exchange rate	133,052,509	306,564,106	21,053	-
Fair value gain on equity investments at FVPL	23,456,734	-	-	-
Others	5,907,340	3,813,372	1,373,913	3,750,217
Total	228,419,701	390,359,658	723,352,923	1,453,912,182

23 Finance costs

	Consolidated financial statements		Separate financial statements	
	2022 Baht	2021 Baht	2022 Baht	2021 Baht
Loans from financial institutions	38,141,345	103,874,712	39,648,518	104,343,714
Debentures	306,202,910	247,603,709	318,082,979	248,739,525
Lease liabilities	22,676,141	14,547,941	15,346,052	9,518,431
Debenture underwriting fees	5,450,554	3,957,594	5,450,554	3,957,594
Provision for liabilities from water business	40,671,664	37,372,224	40,299,255	36,953,522
Others	-	1,960,369	-	-
Total	413,142,614	409,316,549	418,827,358	403,512,786

24 Expense by nature

	Consolidated financial statements		Separate financial statements	
	2022 Baht	2021 Baht	2022 Baht	2021 Baht
Employee benefit expense	182,274,147	128,728,642	176,390,129	124,917,983
Depreciation	319,708,864	275,387,856	178,605,255	163,304,638
Amortisation	47,678,720	47,403,223	46,509,837	46,420,618
Rental expense	4,687,064	2,337,297	3,794,808	2,114,948
Consulting fee	33,348,018	26,364,252	23,091,679	21,492,727
Cost of raw water	807,862,506	764,430,473	800,929,139	759,763,787

25 Income tax benefit (expense)

	Consolidated financial statements		Separate financial statements	
	2022 Baht	2021 Baht	2022 Baht	2021 Baht
Current income tax	61,264,734	31,481,181	26,508,734	-
Adjustment in respect of prior year	(833,800)	14,383	-	-
Deferred income tax (Note 16)	(14,607,701)	(17,236,956)	(16,325,392)	(12,261,350)
Total	45,823,233	14,258,608	10,183,342	(12,261,350)

The income tax on the Group and Company's profit before tax differs from the theoretical amount that would arise using the basic tax rate as follows:

	Consolidated financial statements		Separate financial statements	
	2022 Baht	2021 Baht	2022 Baht	2021 Baht
Profit before income tax	499,965,989	749,772,112	591,623,987	1,270,294,736
<u>Less</u> Profit from promoted activities which exempt from payment of corporate income tax	(124,996,548)	(151,089,824)	-	(18,039,087)
Share of profit from associates and joint ventures	(155,872,887)	(317,339,443)	-	-
	219,096,554	281,342,845	591,623,987	1,252,255,649
Tax calculated at a tax rate of 20%	43,819,311	56,268,569	118,324,797	250,451,130
Tax effects of:				
Income not subject to tax	(43,656,517)	(76,467,391)	(122,582,590)	(266,446,546)
Expenses not deductible for tax purposes	17,120,025	11,714,439	16,781,651	11,347,351
Additional expenses deductible for tax purposes	(845,151)	(12,809)	(845,151)	(12,809)
Utilisation of previously unrecognised tax losses	(3,957,227)	(8,182,879)	(1,495,365)	(7,600,476)
Tax losses for which no deferred income tax asset was recognised	34,176,592	31,056,780	-	-
Adjustment in respect of prior year	(833,800)	14,383	-	-
Effect of different tax rates in countries in which the Group operates	-	(132,484)	-	-
Income tax expenses	45,823,233	14,258,608	10,183,342	(12,261,350)

The tax relating to component of other comprehensive income is as follows:

	Consolidated financial statements					
	2022			2021		
	Before tax Baht	Tax Baht	After tax Baht	Before tax Baht	Tax Baht	After tax Baht
Currency translation differences	(11,602,403)	-	(11,602,403)	(16,727,033)	-	(16,727,033)
Re-measurements of employee benefit obligations	6,699,156	(1,339,831)	5,359,325	-	-	-
Share of other comprehensive income of associates and joint ventures	625,914,277	-	625,914,277	530,165,589	-	530,165,589
Surplus arising from business combination under common control	6,480,761	(1,296,152)	5,184,609	(70,367,367)	14,073,473	(56,293,894)
Total	627,491,791	(2,635,983)	624,855,808	443,071,189	14,073,473	457,144,662
	Separate financial statements					
	2022			2021		
	Before tax Baht	Tax Baht	After tax Baht	Before tax Baht	Tax Baht	After tax Baht
Re-measurements of employee benefit obligations	6,699,156	(1,339,831)	5,359,325	-	-	-
Surplus arising from business combination under common control	7,497,262	(1,499,452)	5,997,810	(75,859,717)	15,171,943	(60,687,774)
Total	14,196,418	(2,839,283)	11,357,135	(75,859,717)	15,171,943	(60,687,774)

26 Earnings per share

	Consolidated financial statements		Separate financial statements	
	2022	2021	2022	2021
Profit attributable to the owners of the parent (Baht)	454,142,761	735,513,498	581,440,645	1,282,556,086
Weighted average number of ordinary shares (shares)	3,825,000,000	3,825,000,000	3,825,000,000	3,825,000,000
Basic earnings per share (Baht)	0.12	0.19	0.15	0.34

27 Related party transactions

Company's major shareholder is WHA Industrial Development Public Company Limited which holds 70.45% of the Company's shares and has WHA Corporation Public Company Limited as an ultimate parent company. The remaining 29.55% of the shares are widely held.

Additional information for transactions with related parties are as follows:

Transactions

	Consolidated financial statements		Separate financial statements	
	2022 Baht	2021 Baht	2022 Baht	2021 Baht
Ultimate Parent				
Income from sales and service	4,894,954	4,385,543	2,756	71,447
Service fee	6,123,660	5,613,355	6,123,660	5,613,355
Management fee	13,925,000	1,020,000	13,925,000	1,020,000
Other expense	2,181,248	1,672,071	2,181,248	1,672,071
Parent				
Raw water cost	14,243,636	59,483,123	14,243,636	59,483,123
Management fee	27,888,000	41,520,000	27,888,000	41,520,000
Advertising fee	420,000	420,000	-	-
Interest expense	3,099,113	3,075,328	3,099,113	3,075,328
Other expense	192,791	205,658	192,791	205,658
Subsidiaries				
Income from sales and service	-	-	369,181,794	321,095,049
Dividend income	-	-	531,285,986	1,270,925,985
Interest income	-	-	186,266,103	177,151,133
Associates				
Income from sales and service	205,209,835	213,228,817	205,209,835	213,228,817
Other income	16,323,266	16,999,920	-	-
Joint ventures				
Income from sales and service	13,842,564	12,517,697	13,542,564	12,217,697
Interest income	9,445,610	10,486,301	-	-
Other related parties				
Income from sales and service	6,117,088	6,921,768	5,226,035	4,778,506
Raw water cost	125,577,247	696,687,647	125,577,247	696,687,647
Service fee	2,812,654	2,987,650	904,310	605,400
Electricity fee	744,596	809,323	744,596	809,323
Amortisation of rights to operate and distribution industrial water	8,692,000	8,692,000	8,692,000	8,692,000
Advertising fee	876,576	600,000	276,576	-
Engineering fee	2,460,000	2,460,000	2,460,000	2,460,000
Interest expense	17,600,103	9,781,016	10,926,161	4,998,400
Other expense	490,391	352,145	437,903	337,795

Outstanding balances

	Consolidated financial statements		Separate financial statements	
	2022 Baht	2021 Baht	2022 Baht	2021 Baht
Receivables				
Ultimate Parent	899,763	691,039	-	19,325
Parent	10,161	10,161	-	-
Subsidiaries	-	-	495,586,585	350,221,360
Associates	18,651,186	19,636,895	14,838,329	15,403,192
Joint ventures	3,286,715	3,550,704	1,476,719	1,712,010
Other related parties	5,401,369	1,116,744	5,373,202	871,131
Total	28,249,194	25,005,543	517,274,835	368,227,018
Payables				
Ultimate Parent	1,350,847	412,935	1,350,847	412,935
Parent	31,228,840	47,045,045	31,228,840	47,045,045
Subsidiaries	-	-	697,105	440,886
Other related parties	22,929,198	85,460,449	22,890,375	85,431,996
Total	55,508,885	132,918,429	56,167,167	133,330,862
Lease Liabilities				
Ultimate Parent	15,970,003	18,823,420	15,970,003	18,823,420
Parent	60,077,519	59,615,579	60,077,519	59,615,579
Other related parties	316,056,586	189,536,213	190,264,145	90,693,168
Total	392,104,108	267,975,212	266,311,667	169,132,167
Provision for liabilities from water business				
Parent and other related parties	425,082,857	425,013,673	420,011,523	421,199,955

Loans to related parties

	Consolidated financial statements		Separate financial statements	
	2022 Baht	2021 Baht	2022 Baht	2021 Baht
Subsidiaries	-	-	7,100,250,520	6,123,490,000
Associates	-	5,327,207	-	-
Joint ventures	225,490,552	248,490,552	-	-
Total	225,490,552	253,817,759	7,100,250,520	6,123,490,000

Loans to subsidiaries are at call and are unsecured. The loans bore interest at 2.91% per annum (2021: 2.79% per annum). The loans that the Company will not call for repayment within the next 12 months are classified as long-term loans to subsidiaries.

Loans to associates were made on commercial terms and conditions. The loans are due within 1 year and are unsecured. The loans bore interest at 6.50% per annum.

Loans to joint ventures were made on commercial terms and conditions. The loans are due within 7 years and 10 years which are unsecured. The loans bore interest at MLR minus 1.25% per annum and minus 1% per annum (2021: MLR minus 1.25% per annum for the loans are due within 7 years).

The movements of loans to related parties are as follows:

	Consolidated financial statements		Separate financial statements	
	2022 Baht	2021 Baht	2022 Baht	2021 Baht
Opening balance	253,817,759	248,490,552	6,123,490,000	6,071,490,000
Additions	27,000,000	5,327,207	1,214,760,520	1,840,000,000
Settlements	(55,753,072)	-	(238,000,000)	(1,788,000,000)
Effect from exchange rate	425,865	-	-	-
Closing balance	225,490,552	253,817,759	7,100,250,520	6,123,490,000

Key management compensation

Key management includes directors (executive and non-executive), members of the executive committee. The compensation paid or payable to key management are as follows:

	Consolidated and separate financial statements	
	2022 Baht	2021 Baht
Salaries and other short-term employee benefits	61,405,722	45,375,311
Retirement benefits	1,686,902	2,603,343
Total	63,092,624	47,978,654

28 Commitments and contingencies

Capital commitments

Capital expenditure contracted but not recognised as liabilities is as follows:

	Consolidated financial statements		Separate financial statements	
	2022 Baht	2021 Baht	2022 Baht	2021 Baht
Construction in progress	455,343,288	458,090,784	40,963,540	55,906,920

Bank guarantees

Banks have provided guarantees on behalf of the Group and Company as follows:

	Consolidated financial statements		Separate financial statements	
	2022 Baht	2021 Baht	2022 Baht	2021 Baht
Baht currency				
Construction in progress	9,517,000	9,169,200	8,625,000	7,607,200
Performance bond with power group	114,701,948	111,053,245	-	-
Others	32,787,719	1,352,719	352,719	352,719
Total	157,006,667	121,575,164	8,977,719	7,959,919
USD currency				
Performance bond with power group	5,693,918	5,520,034	-	-
Total	5,693,918	5,520,034	-	-

29 Significant events

On 30 September 2021, WHAUP (SG) 2DR PTE. LTD. (WHAUP (SG) 2DR), the subsidiary of the Group, had submitted an application to the Vietnam International Arbitration Center (VIAC) to cause Aqua One Water Corporation (Aqua One), a major shareholder of Duong River Surface Water Plant Joint Stock Company (SDWTP), and Mr. Do Tat Thang, a former shareholder, to perform its contractual obligations under the share purchase agreement. Due to SDWTP could not deliver the Amended Investment Registration Certificate (amended IRC), included an amendment to increase SDWTP's project capacity, to WHAUP (SG) 2DR within the contractual period. Under the contractual obligation of the share purchase agreement, if SDWTP could not provide the amended IRC within the assigned time period, WHAUP (SG) 2DR is entitled to sell all of SDWTP shares to Aqua One at the purchased price, plus carrying cost that incurred from the date WHAUP (SG) 2DR paid for the shares until Aqua One fully repay back to WHAUP (SG) 2DR.

On 19 December 2022, WHAUP (SG) 2DR received an arbitral award dated 16 December 2022, pursuant to which the arbitral tribunal rendered an award that Aqua One and Mr. Do Tat Thang shall jointly and severally purchase the shares back from WHAUP (SG) 2DR for the total amounts of VND 1,886,265,957,000 plus the accrued carrying cost during the period from the date WHAUP (SG) 2DR paid for such shares to the date the WHAUP (SG) 2DR receives such payment amount in full. The Company is considering its investment plan in SDWTP and necessary legal actions for this matter.

However, this event did not have an impact to the classification of the investment in associate in consolidated and separate financial statements as at 31 December 2022.

30 Events occurring after the reporting period

On 25 January 2023, the Company issued the debentures No. 1/2023 under the Medium Term Notes Program with the total principal amount of Baht 1,000 million and has been approved for trading in debt securities market by The Securities and Exchange Commission on 20 May 2022. The issuance of this debenture has already been approved by virtue of the resolution of the 2022 Annual General Meeting (AGM) dated 22 April 2022.



4

ATTACHMENT





ATTACHMENT 1

DETAILS OF DIRECTORS, MANAGEMENT, THE PERSON ASSIGNED TO TAKE THE HIGHEST RESPONSIBILITY IN ACCOUNTING AND FINANCE, THE PERSON ASSIGNED TO TAKE DIRECT RESPONSIBILITY FOR ACCOUNTING SUPERVISION AND CORPORATE SECRETARY

Board of Directors

Ms. Jareeporn Jarukornsakul

- **Chairman of the Board of Directors**
Date Appointed 9 February 2018
- **Director**
Date Appointed 25 March 2015
- **Chairman of the Executive Committee**
Date Appointed 9 February 2018
- **Chairman of the Risk Management Committee**
Date Appointed 11 August 2016
- **Nomination and Remuneration Committee member**
Date Appointed 11 August 2016

Age

55 years

Educational Qualification

- Doctor of Philosophy, honoris causa
(Occupational Health and Safety), Mahidol University
- The Honorary Doctorate Degree of Arts in Entrepreneurship,
Bangkok University
- Doctor of Business Administration, Western University
- The Honorary Ph. D. Degree,
Logistics and Supply Chain Management, Christian University
- Master of Business Administration, Bangkok University
- Bachelor of Science Public Health, Mahidol University

Training with Thai Institute of Directors (IOD)

- Director Leadership Certification Program (DLCP) 0/2021
- Role of Chairman Program (RCP) 46/2020
- Corporate Governance for
Capital Market Intermediaries CGI (17/2016)
- Director Accreditation Program (DAP) 210/2015
- Director Certification Program (DCP) 94/2012

Other Training

- Wellness & Healthcare Business Opportunity
for Executives (WHB) (Class 1/2021),
ASEAN Institute for Health Development Mahidol University
- The Executive Program in Energy Literacy for a Sustainable Future
(Class 9/2017), Thailand Energy Academy (TEA)
- National Defense Course (Class 60/2017), National Defense Collage
- Senior Executives on Justice Administration Program
(Class 20/2015), National Justice Academy, Office of Judiciary
- Capital Market Leader Program (Class 18/2014),
Capital Market Academy (CMA)

Shareholding in WHAUP (including spouse and minor)

73,836,600 shares or 1.93%

Family relationship among Directors and Management

- None -

Current Position in Other Organizations

Listed Companies

- | | |
|----------------|---|
| 2022 - Present | Chairman of Corporate Governance
and Sustainable Development Committee
WHA Corporation Public Company Limited |
| 2021 - Present | Risk Management Committee Member
WHA Corporation Public Company Limited |
| 2020 - Present | Acting Chief Technology Officer
WHA Corporation Public Company Limited |
| 2018 - Present | Chairman of the Board of Directors
Chairman of the Executive Committee
WHA Corporation Public Company Limited |
| 2015 - Present | Nomination and Remuneration Committee Member
Group Chief Executive Officer
WHA Corporation Public Company Limited |
| 2022 - Present | Director
Member of the Technology Committee
Member of the Corporate Social Responsibility Committee
SCB X Public Company Limited |
| 2022 - Present | Independent Director
Member of Governance and Nomination Committee
The Siam Cement Public Company Limited |

Organizations/Companies (Not Listed Companies)

Position in Subsidiaries of

WHA Utilities and Power Public Company Limited

- | | |
|----------------|---|
| 2022 - Present | Chairman of the Board of Directors
WHAUP (SG) 3 PTE. Limited |
| 2021 - Present | Director
WHAUP Asia Reclamation Water Company Limited |
| 2019 - Present | Chairman of the Board of Directors
WHAUP (SG) 2DR PTE. LTD. |
| 2018 - Present | Chairman of the Board of Directors
WHAUP Nghe An Joint Stock Company |
| 2018 - Present | Chairman of the Board of Directors
WHA Solar Company Limited |
| 2017 - Present | Chairman of the Board of Directors
WHAUP (SG) 1 PTE. Limited |
| 2017 - Present | Chairman of the Board of Directors
WHAUP (SG) 2 PTE. Limited |
| 2017 - Present | Chairman of the Board of Directors
WHAUP International Company Limited |
| 2015 - Present | Chairman of the Board of Directors
WHA Water Company Limited |
| 2015 - Present | Chairman of the Board of Directors
WHA Energy Company Limited |
| 2015 - Present | Chairman of the Board of Directors
WHA Energy 2 Company Limited |

Position in Subsidiaries of

WHA Corporation Public Company Limited

2018 - Present	Chairman of the Board of Directors Chairman of the Executive Committee WHA Industrial Development Public Company Limited
2021 - Present	Director WHA Digital Company Limited
2019 - Present	Chairman of the Board of Directors WHA Real Estate Management Company Limited
2016 - Present	Chairman of the Board of Directors WHA Daiwa Logistics Property Company Limited
2015 - Present	Director WHA Venture Holding Company Limited
2013 - Present	Chairman of the Board of Directors WHA KPN Alliance Company Limited
2006 - Present	Director Warehouse Asia Alliance Company Limited
2003 - Present	Director WHA Alliance Company Limited

Position in Associated of

WHA Corporation Public Company Limited

2021 - Present	Director WHA KW 2 Company Limited
2021 - Present	Director WHA KW 3 Company Limited
2020 - Present	Director WHA KW Alliance Company Limited
2016 - Present	Director Central WHA Alliance Company Limited

Position in Subsidiaries of

WHA Industrial Development Public Company Limited

2021 - Present	Director Wei Hua Guo Tai (Sanya) Business Consulting Company Limited
2019 - Present	Director WHA Industrial Development 2(SG) Company Limited
2018 - Present	Chairman of the Board of Directors WHA Industrial REIT Management Company Limited
2018 - Present	Chairman of the Board of Directors WHA Industrial Estate Rayong Company Limited
2017 - Present	Chairman of the Board of Directors WHA Industrial Zone Nghe An Joint Stock Company
2017 - Present	Director WHA Industrial Management Services Vietnam Company Limited
2016 - Present	Director WHA Industrial Development International Company Limited
2016 - Present	Director WHA Industrial Development (SG) Pte. Ltd.
2015 - Present	Director WHA Connect Company Limited
2015 - Present	Director WHA Eastern Industrial Estate Company Limited
2015 - Present	Vice Chairman of the Board of Directors Eastern Seaboard Industrial Estate (Rayong) Company Limited
2015 - Present	Director WHA Eastern Seaboard Industrial Estate Company Limited
2015 - Present	Director WHA Saraburi Industrial Land Company Limited
2015 - Present	Director WHA Rayong Industrial Land Company Limited
2015 - Present	Director WHA Eastern Pipeline Services Company Limited
2015 - Present	Director WHA Industrial Development International (BVI) Pte. Ltd.
2015 - Present	Director WHA Industrial Development Engineering Company Limited
2015 - Present	Director The Park Residence Company Limited
2015 - Present	Director WHA Industrial Development International (SG) Pte. Ltd.
2015 - Present	Director WHA Rayong 36 Company Limited
2015 - Present	Director Eastern Seaboard Property and Marina Services Company Limited
2015 - Present	Director WHA Eastern Seaboard Industrial Estate 4 Company Limited

Other Companies

2020 - Present	Director SCB 10X Company Limited
2012 - Present	Director WHA Holding Company Limited
1993 - Present	Director S and J Holding Company Limited

Work Experience (5-Year Past Experience)

Subsidiaries of WHA Utilities and Power Public Company Limited

2013 - 2020	Director WHA Gunkul Green Solar Roof 1 Company Limited
2013 - 2020	Director WHA Gunkul Green Solar Roof 3 Company Limited
2013 - 2020	Director WHA Gunkul Green Solar Roof 6 Company Limited
2013 - 2020	Director WHA Gunkul Green Solar Roof 17 Company Limited

Associated of WHA Utilities and Power Public Company Limited

2018 - 2021	Chairman of the Board of Directors Eastern Seaboard Clean Energy Company Limited
2018 - 2021	Chairman of the Board of Directors Chonburi Clean Energy Company Limited
2019 - 2020	Director Duong River Surface Water Plant Joint Stock Company
2018 - 2020	Director Gulf JP NLL Company Limited
2018 - 2020	Director Gulf Solar Company Limited
2018 - 2020	Director Gulf Solar TS1 Company Limited
2018 - 2020	Director Gulf Solar TS2 Company Limited
2018 - 2020	Director Gulf TS1 Company Limited
2018 - 2020	Director Gulf TS3 Company Limited
2017 - 2020	Director WHA Eastern Seaboard NGD4 Company Limited
2016 - 2020	Director WHA Eastern Seaboard NGD2 Company Limited
2015 - 2020	Director B.Grimm Power (WHA) 1 Limited
2015 - 2020	Director Gulf WHA MT Natural Gas Distribution Company Limited
2015 - 2020	Director Gulf Solar BV Company Limited
2015 - 2020	Director Gulf Solar KKS Company Limited
2015 - 2020	Director Gulf TS2 Company Limited
2015 - 2020	Director Gulf TS4 Company Limited
2015 - 2020	Director Gulf VTP Company Limited
2015 - 2020	Director Gulf NLL2 Company Limited
2018 - 2020	Chairman of the Board of Directors Rayong Clean Energy Company Limited
2018 - 2020	Chairman of the Board of Directors Glow Hemaraj Wind Company Limited
2018 - 2019	Director Gheco-One Company Limited
2015 - 2019	Director Houay Ho Thai Company Limited

Subsidiaries of WHA Corporation Public Company Limited

2019 - 2021	Director WHA-JD Alliance Company Limited
2018 - 2020	Director WHA Corporation (Hong Kong) Company Limited
2003 - 2020	Director WHA Indonesia Company Limited

Subsidiaries of WHA Industrial Development Public Company Limited

2020 - 2022	Director WHA TUS Company Limited
2015 - 2020	Director WHA Industrial Development International (Cayman) Company Limited

Other Companies

2020 - 2022	Director Member of the Technology Committee Member of Corporate Social Responsibility Committee Siam Commercial Bank Public Company Limited
2018 - 2019	Director Supernap (Thailand) Company Limited

Mr. Weidt Nuchjalearn

- **Independent Director**
Date Appointed 2 December 2015
- **Chairman of the Audit Committee**
Date Appointed 11 August 2016
- **Chairman of the Nomination and Remuneration Committee**
Date Appointed 11 August 2016

Age

69 years

Educational Qualification

- Master of Business Administration, Thammasat University
- Bachelor of Science (Agricultural Economics), Kasetsart University

Training with Thai Institute of Directors (IOD)

- Director Accreditation Program (DAP SEC/2015)
- Role of the Chairman Program (RCP 31/2013)

Other Training

- Security Management and Leadership for Executives Program (SML) Class 9/2017, National Defence College
- Top Executive Program (Class 18/2014), Capital Market Academy (CMA)
- Top Executive Program in Commerce and Trade : TEPCoT (Class 3/2010), Commerce Academy
- Financial Executive Development Program (Class 14/2006), Thai Institute of Banking and Finance Association
- Commercial Credit Skills Assessment, Faculty of Commerce and Accountancy, Chulalongkorn University

Shareholding in WHAUP (including spouse and minor)

- None -

Family relationship among Directors and Management

- None -

Current Position in Other Organizations

Listed Companies

2021 - Present	Director Union Auction Public Company Limited
2020 - Present	Executive Committee member Union Auction Public Company Limited
2021 - Present	Vice Chairman Chairman of Risk Management Committee Audit Committee member Independent Director Micro Leasing Public Company Limited
2017 - Present	Chairman of the Board of Directors Independent Director Siamrajathanee Public Company Limited
2017 - Present	Chairman of the Board of Directors Chairman of Audit Committee Independent Director Siam Technic Concrete Public Company Limited
2017 - Present	Adviser Dhipaya Insurance Public Company Limited
2014 - Present	Chairman of Audit Committee Independent Director Thai Foods Group Public Company Limited

Organizations/Companies (Not Listed Companies)

2022 - Present	Director Bewealth Consultants Company Limited
2022 - Present	Director Erawan Insurance Public Company Limited
2022 - Present	Director TIP ISB Company Limited
2020 - Present	Expert Financial Advisory Center (TGC F.A. Center)
2018 - Present	Chairman of the Board of Directors Hinsitsu (Thailand) Company Limited
2017 - Present	Chairman of the Board of Directors Thai Techno Glass Group Public Company Limited
2015 - Present	Expert/Adviser Small and Medium Enterprise Development Bank of Thailand

Work Experience (5-Year Past Experience)

2018 - 2019	Director Srisawad Finance Public Company Limited
2017 - 2019	Director Raimon Land Public Company Limited
2015 - 2019	Director Srisawad Power Company Limited
2016 - 2018	Director Provincial Waterworks Authority
2016 - 2018	Expert Market for Alternative Investment (MAI)
2015 - 2018	Director Zoological Park Organization of Thailand
2015 - 2018	Director Forest Industry Organization

Mrs. Punnee Worawuthichongsathit

- **Independent Director**
Date Appointed 2 December 2015
- **Audit Committee member**
Date Appointed 11 August 2016
- **Chairman of the Corporate Governance and Sustainable Development Committee**
Date Appointed 11 August 2016

Age

70 years

Educational Qualification

- Master of Accountancy, Chulalongkorn University
- Bachelor of Accountancy, Chulalongkorn University

Training with Thai Institute of Directors (IOD)

- Director Leadership Certification Program (DLCP 7/2022)
- Driving Company Success with IT Governance (ITG 4/2017)
- Ethical Leadership Program (ELP 2/2015)
- Anti-Corruption the Practical Guide (ACPG 10/2014)
- Anti-Corruption for Executive Program (ACEP 10/2014)
- Role of the Nomination & Governance Committee (RNG 1/2011)
- Role of the Chairman Program (RCP 25/2011)
- DCP Refresher Course (RE DCP 2/2009)
- Monitoring Fraud Risk Management (MFM 1/2009)
- Role of the Compensation Committee (RCC 7/2008)
- Chartered Director Class (CDC 7/2008)
- Monitoring the System of Internal Control and Risk Management (MIR 2/2008)
- Monitoring the Internal Audit Function (MIA 1/2007)
- Improve the Quality of Financial Reporting (MFR 5/2007)
- Audit Committee Program (ACP 2/2004)
- Director Accreditation Program (DAP 2/2003)
- Director Certification Program (DCP 38/2003)

Other Training

- Certified Public Accountant (CPA), Federation of Accounting Professions
- Certified Professional Internal Auditors (CPIA), The Institute of Internal Auditors of Thailand
- Qualified Internal Auditors (QIA), The Institute of Internal Auditors of Thailand
- Certified Internal Auditor (CIA), The Institute of Internal Auditors (IIA)

Shareholding in WHAUP (including spouse and minor)

- None -

Family relationship among Directors and Management

- None -

Current Position in Other Organizations

Listed Companies

- 2016 - Present Independent Director and Audit Committee member
Saha Pathana Inter-Holding Public Company Limited
- 2007 - Present Chairman of the Board of Directors
and Independent Director
Mono Next Public Company Limited
- 2010 - Present Independent Director and Audit Committee member
Thai Wacoal Public Company Limited
- 2004 - Present Independent Director
Audit Committee member
Chairwoman of the Nominating Committee
and Chairwoman of the Compensation Committee
The Brooker Group Public Company Limited

Organizations/Companies (Not Listed Companies)

- 2020 - Present Board Member of the Taxation Committee
Federation of Accounting Professions
- 2020 - Present Advisor of the Management
Accounting Profession Committee
Federation of Accounting Professions
- 2020 - Present Advisor of the Branch Management Committee
Federation of Accounting Professions
- 2018 - Present Audit Committee member Thai Investors Association
- 2017 - Present Audit Committee member Chulabhorn Royal Academy
- 2016 - Present Chairman of Board of Directors
PW Consultants Company Limited
- 2015 - Present Audit Committee member
University of the Thai Chamber of Commerce
- 2013 - Present Audit Committee member The Thai Chamber
of Commerce and Board of Trade of Thailand

Work Experience (5-Year Past Experience)

- 2017 - 2019 Advisor of the Taxation Committee
Federation of Accounting Professions
- 2017 - 2019 Single Accounting System Development Subcommittee
Federation of Accounting Professions
- 2014 - 2017 Board Member of the Taxation Committee
Federation of Accounting Professions
- 2011 - 2017 Taxation Committee member
The Thai Chamber of Commerce
and Board of Trade of Thailand

Mr. Ekajai Tivutanond

- **Independent Director**
Date Appointed 2 December 2015
- **Audit Committee member**
Date Appointed 11 August 2016
- **Corporate Governance and Sustainable Development Committee member**
Date Appointed 11 August 2016
- **Nomination and Remuneration Committee member**
Date Appointed 10 February 2018

Age

70 years

Educational Qualification

- Master of Laws, Columbia University, New York, U.S.A.
- Bachelor of Laws (First Class Honor), Thammasat University
- Thai Bar Association

Training with Thai Institute of Directors (IOD)

- Board Nomination and Compensation Program (BNCP 9/2020)
- Advance Audit Program (AACP 32/2019)
- Director Accreditation Program (DAP 127/2016)

Other Training

- None -

Shareholding in WHAUP (including spouse and minor)

- None -

Family relationship among Directors and Management

- None -

Current Position in Other Organizations

Listed Companies

2020 - Present Independent Director
Scan Inter Public Company Limited
2021 - Present Independent Director and Audit Committee members
AQ Estate Public Company Limited

Organizations/Companies (Not Listed Companies)

2006 - Present Director
Sathorn Asset Management Company Limited

Work Experience (5-Year Past Experience)

1999 - 2012 Senior Executive Vice President
Business Support Group
CIMB Thai Bank Public Company Limited

Mr. Numchai Lowattanatakul

- **Independent Director**
Date Appointed 20 April 2021
- **Risk Management Committee member**
Date Appointed 12 May 2021

Age

66 years

Educational Qualification

- Master of Business Administration, Kasetsart University
- Bachelor of Engineering Program in Electrical Engineering, Chulalongkorn University

Training with Thai Institute of Directors (IOD)

- Director Certification Program (DCP 140/2011)

Other Training

- Diploma of Energy Literacy (2014), Thailand Energy Academy
- Diploma of National Defence College Class 51/2008, National Defence College of Thailand
- Diploma of Mini MBA (2001), Kasetsart University
- Diploma of Main Operation & Maintenance Training (1986), Germany

Shareholding in WHAUP (including spouse and minor)

- None -

Family relationship among Directors and Management

- None -

Current Position in Other Organizations

Listed Companies

2022 - Present Independent Director
Audit Committee member
Seven Utilities and Power Public Company Limited
2021 - Present Chairman of the Board of Directors and Independent Director
DV8 Public Company Limited

Organizations/Companies (Not Listed Companies)

2018 - Present Subcommittee
National Innovation Agency, Thailand
2016 - Present Subcommittee
Office of the Energy Regulatory Commission
2021 - Present Independent Director and Chairman of Audit Committee
Wind Energy Holding Company Limited

Work Experience (5-Year Past Experience)

2016 - 2021 Audit Committee member
DV8 Public Company Limited
2012 - 2015 Governor
Provincial Electricity Authority

Mr. David Richard Nardone

- **Director**
Date Appointed 30 June 2008
- **Executive Committee member**
Date Appointed 11 August 2016
- **Risk Management Committee member**
Date Appointed 11 August 2016

Age

67 years

Educational Qualification

- Master of Business Administration,
Northeastern University, Boston, U.S.A.
- Bachelor of Business Administration,
Northeastern University, Boston, U.S.A.

Training with Thai Institute of Directors (IOD)

- Director Certification Program (DCP 57/2005),
Thai Institute of Director (IOD)

Other Training

- None -

Shareholding in WHAUP (including spouse and minor)

- None -

Family relationship among Directors and Management

- None -

Current Position in Other Organizations

Listed Companies

2016 - Present Directors
Executive Committee member
WHA Corporation Public Company Limited

Organizations/Companies (Not Listed Companies)

Position in Associated of

WHA Utilities and Power Public Company Limited

2021 - Present Chairman of the Board of Directors
Eastern Seaboard Clean Energy Company Limited
2021 - Present Chairman of the Board of Directors
Chonburi Clean Energy Company Limited

Position in Subsidiaries of

WHA Corporation Public Company Limited

1994 - Present Director
Executive Committee Member
WHA Industrial Development Public Company Limited

Position in Subsidiaries of

WHA Industrial Development Public Company Limited

2020 - Present Vice Chairman of the Board of Directors
WHA TUS Company Limited
2018 - Present Managing Director
WHA Industrial Estate Rayong Company Limited
2017 - Present Director
WHA Industrial Zone Nghe An Joint Stock Company
2017 - Present Director
WHA Industrial Management Services Vietnam Co., Ltd.
1994 - Present Managing Director Eastern Seaboard Industrial
Estate (Rayong) Company Limited

Position in Associated of

WHA Industrial Development Public Company Limited

2020 - Present Director BIG WHA Industrial Gas Company Limited

Work Experience (5-Year Past Experience)

Subsidiaries of WHA Utilities and Power Public Company Limited

2021 - Jan. 2023 Director
WHAUP Asia Reclamation Water Company Limited
2019 - Jan. 2023 Director WHAUP (SG) 2DR PTE. LTD.
2018 - Jan. 2023 Director WHA Solar Company Limited
2018 - Jan. 2023 Director WHAUP Nghe An Joint Stock Company
2017 - Jan. 2023 Director WHAUP International Company Limited
2017 - Jan. 2023 Director WHAUP (SG) 1 PTE. Limited
2017 - Jan. 2023 Director WHAUP (SG) 2 PTE. Limited
2015 - Jan. 2023 Director WHA Energy 2 Company Limited
2011 - Jan. 2023 Director WHA Energy Company Limited
2005 - Jan. 2023 Director WHA Water Company Limited

Associated of WHA Utilities and Power Public Company Limited

2020 - Jan. 2023 Director Duong River Surface Water Plant
Joint Stock Company
2013 - Jan. 2023 Directors Gheco-One Company Limited

Subsidiaries of WHA Corporation Public Company Limited

1994 - Feb. 2023 Group Executive Industrial and International (CEO)
WHA Industrial Development Public Company Limited

Subsidiaries of WHA Industrial Development Public Company Limited

2021 - Jan. 2023 Director WHA Industrial Building Company Limited
2021 - Jan. 2023 Director Wei Hua Guo Tai (Sanya)
Business Consulting Company Limited
2019 - Jan. 2023 Director WHA Industrial Development 2 (SG)
Company Limited
2016 - Jan. 2023 Director WHA Industrial Development (SG) Pte. Limited
2016 - Jan. 2023 Director WHA Industrial Development
International Company Limited
2015 - Jan. 2023 Director WHA Industrial Development
International (SG) Pte. Limited
2014 - Jan. 2023 Director WHA Eastern Seaboard
Industrial Estate 4 Company Limited
2013 - Jan. 2023 Director Eastern Seaboard Property and
Marina Services Company Limited
2012 - Jan. 2023 Director WHA Rayong 36 Company Limited
2005 - Jan. 2023 Director
WHA Rayong Industrial Land Company Limited
2005 - Jan. 2023 Director
WHA Saraburi Industrial Land Company Limited
2003 - Jan. 2023 Director The Park Residence Company Limited
2001 - Jan. 2023 Director WHA Industrial Development
Engineering Company Limited
1997 - Jan. 2023 Director WHA Industrial Development
International (BVI) Company Limited
1996 - Jan. 2023 Director WHA Eastern Seaboard Industrial
Estate Company Limited
1995 - Jan. 2023 Director
WHA Eastern Pipeline Services Company Limited
1994 - Jan. 2023 Director
WHA Eastern Industrial Estate Company Limited
1994 - 2020 Director WHA Industrial Development
International Company Limited (Cayman Island)

Remark : Information as of 28 February 2023

Mr. Vivat Jiratikarnsakul

- **Director**
Date Appointed 25 March 2015
- **Executive Committee member**
Date Appointed 11 August 2016
- **Corporate Governance and Sustainable Development Committee member**
Date Appointed 11 August 2016

Age

66 years

Educational Qualification

- Bachelor of Engineering (Sanitary Engineering), Chulalongkorn University

Training with Thai Institute of Directors (IOD)

- Anti-Corruption for Executive Program (ACEP 2/2014)
- IOD Luncheon briefing 1/2013 : Thailand Economic Outlook 2013
- Director Accreditation Program (DAP 2/2003)
- Director Certification Program (DCP 38/2003)

Other Training

- None -

Shareholding in WHAUP (including spouse and minor)

- None -

Family relationship among Directors and Management

- None -

Current Position in Other Organizations

Listed Companies

2016 - Present Director
Executive Committee Member
WHA Corporation Public Company Limited

Organizations/Companies (Not Listed Companies)

Position in Subsidiaries of

WHA Utilities and Power Public Company Limited

2018 - Present Director WHAUP Nghe An Joint Stock Company

Position in Subsidiaries of

WHA Corporation Public Company Limited

1995 - Present Executive Committee
WHA Industrial Development Public Company Limited
1994 - Present Director
WHA Industrial Development Public Company Limited

Position in Subsidiaries of

WHA Corporation Public Company Limited

1995 - Present Executive Committee Member
and Chief Operating Officer
WHA Industrial Development Public Company Limited
1994 - Present Director
WHA Industrial Development Public Company Limited

Position in Subsidiaries of

WHA Industrial Development Public Company Limited

2018 - Present Director WHA Industrial Estate Rayong Company Limited
1994 - Present Director Eastern Seaboard Industrial Estate (Rayong) Company Limited

Work Experience (5-Year Past Experience)

Subsidiaries of WHA Utilities and Power Public Company Limited

2021 - Jan. 2023 Director
WHAUP Asia Reclamation Water Company Limited
2019 - Jan. 2023 Director WHAUP (SG) 2DR PTE. LTD.
2018 - Jan. 2023 Director WHA Solar Company Limited
2017 - Jan. 2023 Director WHAUP (SG) 1 PTE. Limited
2017 - Jan. 2023 Director WHAUP (SG) 2 PTE. Limited
2017 - Jan. 2023 Director WHAUP International Company Limited
2015 - Jan. 2023 Director WHA Energy 2 Company Limited
2011 - Jan. 2023 Director WHA Energy Company Limited
2005 - Jan. 2023 Director WHA Water Company Limited

Associated Companies of

WHA Utilities and Power Public Company Limited

2019 - Jan. 2023 Director Duong River Surface
Water Plant Joint Stock Company
2018 - 2021 Director Gheco-One Company Limited
2009 - 2021 Director Houay Ho Power Company Limited
2008 - 2021 Director Houay Ho Thai Company Limited

Subsidiaries of

WHA Corporation Public Company Limited

1995 - Feb. 2023 Chief Operating Officer
WHA Industrial Development Public Company Limited

Subsidiaries of

WHA Industrial Development Public Company Limited

2017 - Feb. 2023 Director WHA Industrial Zone
Nghe An Joint Stock Company
2017 - Feb. 2023 Director WHA Industrial Management
Services Vietnam Company Limited
2021 - Jan. 2023 Director WHA Industrial Building Company Limited
2021 - Jan. 2023 Director Wei Hua Guo Tai (Sanya)
Business Consulting Co. Ltd.
2019 - Jan. 2023 Director WHA Industrial Estate
Development 2 (SG) Company Limited
2016 - Jan. 2023 Director WHA Industrial Development (SG) Pte. Ltd.
2016 - Jan. 2023 Director WHA Industrial Development
International Company Limited
2015 - Jan. 2023 Director WHA Industrial Development
International (SG) Pte. Ltd.
2013 - Jan. 2023 Director Eastern Seaboard Property and
Marina Services Company Limited
2012 - Jan. 2023 Director WHA Rayong 36 Company Limited
2005 - Jan. 2023 Director
WHA Saraburi Industrial Land Company Limited
2005 - Jan. 2023 Director
WHA Rayong Industrial Land Company Limited
2003 - Present Director The Park Residence Company Limited
2001 - Jan. 2023 Director WHA Industrial Development
Engineering Company Limited
1997 - Jan. 2023 Director WHA Industrial Development
International (BVI) Company Limited
1996 - Jan. 2023 Director WHA Eastern Seaboard
Industrial Estate Company Limited
1995 - Jan. 2023 Director
WHA Eastern Pipeline Services Company Limited
1994 - Jan. 2023 Director
WHA Eastern Industrial Estate Company Limited
2020 - 2022 Director WHA TUS Company Limited
1994 - 2020 Director WHA Industrial Development
International Company Limited (Cayman Island)

Associated Companies of

WHA Industrial Development Public Company Limited

2020 - 2022 Director
BIG WHA Industrial Gas Company Limited

Remark : Information as of 28 February 2023.

Mr. Somkiat Masunthasuwun

- **Director**
Date Appointed 23 April 2022
- **Executive Committee member**
Date Appointed 23 April 2022
- **Chief Executive Officer**
Date Appointed 1 May 2022

Age

54 years

Educational Qualification

- Master of Management, Sasin Graduate Institute of Business Administration of Chulalongkorn University
- M.S.E. (Science in Engineering), Mechanical Engineering, University of Michigan, U.S.A.
- M.S.E. (Science in Engineering), Industrial & Operations Research, University of Michigan, U.S.A.
- Bachelor of Engineering (Mechanical Engineering), Chulalongkorn University

Training with Thai Institute of Directors (IOD)

- Director Leadership Certification Program (DLCP 7/2022)
- Director Accreditation Program (DAP 195/2022)
- Director Certification Program (DCP 176/2013)

Other Training

- Capital Market Academy Program (26/2018), Capital Market Academy
- Leadership Development Program Level III, PLLI, PTT
- Columbia Senior Executive Program (CSEP), Columbia University
- PTT Leadership Development Program by Center for Creative Leadership (CCL), Singapore
- Executive Program on Rule of Law and Development, Thailand Institute of Justice

Shareholding in WHAUP (including spouse and minor)

- None -

Family relationship among Directors and Management

- None -

Current Position in Other Organizations

Listed Companies

- None -

Organizations/Companies (Not Listed Companies)

Position in Subsidiaries of

WHA Utilities and Power Public Company Limited

2022 - Present	Director WHA Water Company Limited
2022 - Present	Director WHA Energy Company Limited
2022 - Present	Director WHA Energy 2 Company Limited
2022 - Present	Director WHAUP International Company Limited
2022 - Present	Director WHA Solar Company Limited
2022 - Present	Director WHAUP (SG) 1 PTE. Limited
2022 - Present	Director WHAUP (SG) 2 PTE. Limited
2022 - Present	Director WHAUP (SG) 2DR PTE. Limited
2022 - Present	Director WHAUP (SG) 3 PTE. Limited
2022 - Present	Director WHAUP Nghe An Joint Stock Company
2022 - Present	Director WHA Gunkul Green Solar Roof 1 Company Limited
2022 - Present	Director WHA Gunkul Green Solar Roof 3 Company Limited
2022 - Present	Director WHA Gunkul Green Solar Roof 6 Company Limited
2022 - Present	Director WHA Gunkul Green Solar Roof 17 Company Limited
2022 - Present	Director WHAUP Asia Reclamation Water Company Limited
2022 - Present	Chairman of the Board of Directors Stella Power 1 Company Limited
2022 - Present	Chairman of the Board of Directors Stella Power 2 Company Limited

Position in Associated of

WHA Utilities and Power Public Company Limited

2022 - Present	Director Eastern Seaboard Clean Energy Company Limited
2022 - Present	Director Chonburi Clean Energy Company Limited
2022 - Present	Director Gheco-One Company Limited
2022 - Present	Director Houay Ho Thai Company Limited
2022 - Present	Director Houay Ho Power Company Limited
2022 - Present	Director B.Grimm Power (WHA) 1 Limited
2022 - Present	Chairman of the Board of Directors Gulf WHA MT Natural Gas Distribution Company Limited
2022 - Present	Chairman of the Board of Directors WHA Eastern Seaboard NGD2 Company Limited
2022 - Present	Chairman of the Board of Directors WHA Eastern Seaboard NGD4 Company Limited
2022 - Present	Director Gulf JP NLL Company Limited
2022 - Present	Director Gulf TS1 Company Limited
2022 - Present	Director Gulf TS2 Company Limited
2022 - Present	Director Gulf TS3 Company Limited
2022 - Present	Director Gulf TS4 Company Limited
2022 - Present	Director Gulf VTP Company Limited
2022 - Present	Director Gulf NLL2 Company Limited
2022 - Present	Director Gulf Solar Company Limited
2022 - Present	Director Gulf Solar TS1 Company Limited
2022 - Present	Director Gulf Solar TS2 Company Limited
2022 - Present	Director Gulf Solar BV Company Limited
2022 - Present	Director Gulf Solar KKS Company Limited
2022 - Present	Director Cua Lo Water Supply Joint Stock Company
2022 - Present	Director Duong River Surface Water Plant Joint Stock Company

Work Experience (5-Year Past Experience)

2021 - 2022	Executive Vice President CP Vietnam Corporation
2019 - 2021	Senior Executive Vice President Mitr Phol Sugar Corporation Limited
2016 - 2019	Executive Vice President, Business Development and Corporate Strategy Global Power Synergy Public Company Limited
2014 - 2016	Executive Vice President, Natural Gas for Vehicle PTT Public Company Limited
2013 - 2014	Executive Vice President, Natural Gas Supply and Marketing PTT Public Company Limited

Mr. Pajongwit Pongsivapai

- **Director**
Date Appointed 22 April 2022
- **Executive Committee Member**
Date Appointed 9 July 2021

Age

54 years

Educational Qualification

- Master of Science in Chemical Engineering,
Oregon State University, Corvallis, Oregon, U.S.A.
- Bachelor of Chemical Engineering, Chulalongkorn University

Training with Thai Institute of Directors (IOD)

- Subsidiary Governance Program (SGP 3/2022)

Other Training

- TLCA Leadership Development Program (LDP) "Enhancing the Competitiveness of Thai Companies" Class 2/2014 organized by Thai Listed Companies Association (TLCA) and International Institute for Management Development (Switzerland)
- TLCA Executive Development Program (EDP), organized by Thai Listed Companies Association (TLCA)
- Advanced Certificate Course in Politics and Governance in Democratic Systems for Executives conducted by
- The College of Politics and Governance, King Prajadhipok's Institute, Thailand
- General Management Program at CEDEP European Centre for Executive Development, INSEAD Fontainebleau, France

Shareholding in WHAUP (including spouse and minor)

589,000 shares or 0.015%

Family relationship among Directors and Management

- None -

Current Position in Other Organizations

Listed Companies

2021 - Present Executive Committee Member
Chief Operating Officer
WHA Corporation Public Company Limited

Other Organizations/Companies (Not Listed Companies)

Position in Associated of

WHA Utilities and Power Public Company Limited

2021 - Present Director
Eastern Seaboard Clean Energy Company Limited
2021 - Present Director Chonburi Clean Energy Company Limited
2021 - Present Director Gheco-One Company Limited
2021 - Present Director Houay Ho Thai Company Limited
2021 - Present Director Houay Ho Power Company Limited
2021 - Present Director B.Grimm Power (WHA) 1 Limited
2021 - Present Director Gulf WHA MT Natural Gas
Distribution Company Limited
2021 - Present Director WHA Eastern Seaboard NGD2 Company Limited
2021 - Present Director WHA Eastern Seaboard NGD4 Company Limited
2021 - Present Director Gulf TS1 Company Limited
2021 - Present Director Gulf TS2 Company Limited
2021 - Present Director Gulf TS3 Company Limited
2021 - Present Director Gulf TS4 Company Limited
2021 - Present Director Gulf VTP Company Limited
2021 - Present Director Gulf NLL2 Company Limited

Position in Subsidiaries of

WHA Corporation Public Company Limited

2020 - Present Executive Committee Member
WHA Industrial Development Public Company Limited

Subsidiaries of

WHA Industrial Development Public Company Limited

Jan. 2023 - Present Director WHA Industrial Development
International Company Limited
Jan. 2023 - Present Director WHA Eastern Seaboard
Industrial Estate Company Limited
Jan. 2023 - Present Director
WHA Eastern Industrial Estate Company Limited
Jan. 2023 - Present Director
WHA Saraburi Industrial Land Company Limited
Jan. 2023 - Present Director
WHA Rayong Industrial Land Company Limited
Jan. 2023 - Present Director WHA Rayong 36 Company Limited
Jan. 2023 - Present Director WHA Eastern Seaboard
Industrial Estate 4 Company Limited
Jan. 2023 - Present Director
WHA Eastern Pipeline Services Company Limited
Jan. 2023 - Present Director Eastern Seaboard Property and
Marina Services Company Limited
Jan. 2023 - Present Director The Park Residence Company Limited
Jan. 2023 - Present Director WHA Industrial Development
International (SG) Pte. Ltd.
Jan. 2023 - Present Director WHA Industrial Development
International 2 (SG) Pte. Ltd.
Jan. 2023 - Present Director WHA Industrial Development
International (SG) Pte. Ltd.
2022 - Present Director WHA Industrial Development
Engineering Company Limited
2022 - Present Director WHA TUS Company Limited
2021 - Present Director WHA Industrial Building Company Limited

Position in Associated of

WHA Industrial Development Public Company Limited

2022 - Present Director BIG WHA Industrial Gas Company Limited

Work Experience (5-Year Past Experience)

2020 - 2021 Chief Operating Officer
Global Power Synergy Public Company Limited
2019 - 2020 Chief Executive Officer
Glow Energy Public Company Limited
2015 - 2019 Chief Financial Officer
Glow Energy Public Company Limited

Remark : Information as of 28 February 2023

Mr. Krailuck Asawachatroj

• Director

Date Appointed 20 April 2021

Age

50 years

Educational Qualification

- Master of Financial Engineering, New York University, U.S.A.
- Master of Business Administration, Majoring Finance, Claremont Graduate University, U.S.A.
- Bachelor of Industrial Engineering, Thammasat University

Training with Thai Institute of Directors (IOD)

- Director Certification Program (DCP 175/2014)

Other Training

- Capital Market Academy Program (31/2022), Capital Market Academy
- CPD Course – Financial Statement 2019, CPD Tutor

Shareholding in WHAUP (including spouse and minor)

- None -

Family relationship among Directors and Management

- None -

Current Position in Other Organizations

Listed Companies

2016 - Present Executive Committee Member
and Chief Strategic Officer
WHA Corporation Public Company Limited

Organizations/Companies (Not Listed Companies)

Position in Subsidiaries of

WHA Corporation Public Company Limited

2021 - Present Director WHA Digital Company Limited

2015 - Present Director

Executive Committee Member

Chief Strategic Officer

WHA Industrial Development Public Company Limited

Position in Associated of

WHA Corporation Public Company Limited

2021 - Present Director WHA KPN Alliance Company Limited

Position in Subsidiaries of

WHA Industrial Development Public Company Limited

Jan. 2023 - Present Director

WHA Industrial Development International
Company Limited

Jan. 2023 - Present Director Wei Hua Guo Tai (Sanya)

Business Consulting Company Limited

2022 - Present Chairman of the Board of Directors

WHA TUS Company Limited

2018 - Present Director WHA Industrial Estate Rayong

Company Limited

2017 - Present Director

WHA Industrial Zone Nghe An Joint Stock Company

2017 - Present Director WHA Industrial Management Services

Vietnam Company Limited

2016 - Present Director

WHA Industrial Development International

Company Limited

2015 - Present Director WHA Eastern Industrial Estate

Company Limited

2015 - Present Director Eastern Seaboard Industrial

Estate (Rayong) Company Limited

2015 - Present Director WHA Eastern Seaboard

Industrial Estate Company Limited

2015 - Present Director WHA Saraburi Industrial Land

Company Limited

2015 - Present Director WHA Rayong Industrial Land

Company Limited

2015 - Present Director WHA Eastern Pipeline Services

Company Limited

2015 - Present Director The Park Residence Company Limited

2015 - Present Director WHA Industrial Development

Engineering Company Limited

2015 - Present Director WHA Industrial Development

International (SG) Pte. Ltd.

2015 - Present Director WHA Rayong 36 Company Limited

2015 - Present Director Eastern Seaboard Property and

Marina Services Company Limited

2015 - Present Director WHA Eastern Seaboard Industrial

Estate 4 Company Limited

2015 - Present Director WHA Industrial REIT Management

Company Limited

Work Experience (5-Year Past Experience)

2016 - 2021 Director WHA Corporation Public Company Limited

Subsidiaries of WHA Corporation Public Company Limited

2015 - 2022 Director

WHA Industrial Development Public Company Limited

2019 - 2020 Chief Financial Officer

WHA Industrial Development Public Company Limited

Subsidiaries of WHA Industrial Development Public Company Limited

2016 - 2022 Director WHA Industrial Development (SG) Pte. Limited

2019 - 2022 Director WHA Industrial Development

International (BVI) Company Limited

2015 - 2020 Director WHA Industrial Development

International Limited (Cayman Island)

Remark : Information as of 28 February 2023

Management and Corporate Secretary

Mr. Akarin Prathuangsit

- **Executive Committee member**
Date Appointed 23 April 2022
- **Chief Operating Officer**
Date Appointed 23 February 2022

Age

47 years

Educational Qualification

- Master of Business Administration, Assumption University
- Bachelor of Industrial Engineering, Sirindhorn International Institute of Technology (SIIT)

Training

- Integration of Renewable Energy Sources with Energy Storage System : Policy, Planning, Design, Solutions, Operation and Control, 2022
- Health Safety and Working Environmental Committee Program Class 161/2022
- Director Accreditation Program (DAP) Class184/2021, Thai Institute of Directors Association (IOD)
- Executive Energy Program (EE) Class 6/2021, Institute of Industrial Energy Federation of Thai Industries
- The Young Executive Program in Energy Literacy for Sustainable Future (YTEA) Class 7, 2019, Thailand Energy Academy
- Leadership Development Program (LDP) 2018, Thai Listed Companies Association (TLCA)
- Executive Development Program (EDP) 2014, Thai Listed Companies Association (TLCA)

Shareholding in WHAUP (including spouse and minor)

2,600 shares

Family relationship among Directors and Management

- None -

Current Position in Other Organizations

Listed Companies

- None -

Other Organizations/Companies (Not Listed Companies)

Position in Subsidiaries of

WHA Utilities and Power Public Company Limited

Jan. 2023 - present Director WHA Water Company Limited
 Jan. 2023 - present Director WHA Energy Company Limited
 Jan. 2023 - present Director WHA Energy 2 Company Limited
 Jan. 2023 - present Director WHAUP International Company Limited
 Jan. 2023 - present Director WHA Solar Company Limited
 Jan. 2023 - present Director WHAUP (SG) 1 PTE. Limited
 Jan. 2023 - present Director WHAUP (SG) 2 PTE. Limited
 Jan. 2023 - present Director WHAUP (SG) 2DR PTE. Limited
 Jan. 2023 - present Director WHAUP Nghe An Joint Stock Company
 Jan. 2023 - present Director WHAUP Asia Reclamation Water Company Limited
 2022 - present Director WHAUP (SG) 3 PTE. Limited
 2022 - present Director Stella Power 1 Company Limited
 2022 - present Director Stella Power 2 Company Limited

Position in Associated of

WHA Utilities and Power Public Company Limited

Mar. 2023 - present Director
 Duong River Surface Water Plant Joint Stock Company
 Jan 2023 - present Director Gheco-One Company Limited

Work Experience (5-Year Past Experience)

2020 - 2022 Senior Vice President Procurement
 Global Power Synergy Public Company Limited
 2016 - 2020 Chief Procurement Officer
 GLOW Public Company Limited

Remark : Information as of 28 February 2023

Mr. Prapon Chinudomsab

- **Executive Committee member**
Date Appointed 1 September 2020
- **Chief Financial Officer**
(The person assigned to take the highest responsibility in Accounting and Finance)
Date Appointed 1 September 2020

Age

43 years

Educational Qualification

- Master of Business Administration, Thammasat University
- Master of Engineering (Civil Engineering), Chulalongkorn University
- Bachelor of Engineering (Civil Engineering) (2nd class honors), Chulalongkorn University

Training

- Certificate in Financial Literacy, class 2022, NYC Management Company Limited
- Certificate in CFO 2022, NYC Management Company Limited
- Certificate in TFRS for NPAEs, class 2021, NYC Management Company Limited
- Certificate in Accounting and Financial Preparation (CFO's Orientation Course), class 2020, Thailand Securities Institute (TSI)
- Certified Investment and Security Analyst (CISA), Thailand Securities Institute (TSI)
- Certificate in Executive Development Program (EDP), class 2018, Thai Listed Company Association (TLCA)

Shareholding in WHAUP (including spouse and minor)

- None -

Family relationship among Directors and Management

- None -

Current Position in Other Organizations

Listed Companies

- None -

Other Organizations/Companies (Not Listed Companies)

Position in Subsidiaries of

WHA Utilities and Power Public Company Limited

Jan. 2023 - present	Director WHA Water Company Limited
Jan. 2023 - present	Director WHA Energy Company Limited
Jan. 2023 - present	Director WHA Energy 2 Company Limited
Jan. 2023 - present	Director WHAUP International Company Limited
Jan. 2023 - present	Director WHAUP Asia Reclamation Water Company Limited
2022 - present	Director Stella Power 1 Company Limited
2022 - present	Director Stella Power 2 Company Limited
2020 - present	Director WHA Gunkul Green Solar Roof 1 Company Limited
2020 - present	Director WHA Gunkul Green Solar Roof 3 Company Limited
2020 - present	Director WHA Gunkul Green Solar Roof 6 Company Limited
2020 - present	Director WHA Gunkul Green Solar Roof 17 Company Limited

Position in Associated of

WHA Utilities and Power Public Company Limited

2020 - present	Director Cua Lo Water Supply Joint Stock Company
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Work Experience (5-Year Past Experience)

2020 - 2021	Director B.Grimm Power (WHA) 1 Limited
2020 - 2021	Director Gulf WHA MT Natural Gas Distribution Company Limited
2020 - 2021	Director WHA Eastern Seaboard NGD2 Company Limited
2020 - 2021	Director WHA Eastern Seaboard NGD4 Company Limited
2017 - 2020	Vice President of Finance and Treasury Glow Energy Public Company Limited

Remark : Information as of 28 February 2023

Mr. Khamhoung Ratsamany

- **Vice President of Utilities Operations**
Date Appointed 1 January 2016

Age

57 years

Educational Qualification

- Master of Business Administration, Bangkok University
- Bachelor of Science (Mechanical Engineering),
University of Waterloo, Canada

Training

- Safety Officer Certificate, Ministry of Labour
- Certificate, ISO 9001/14001 Lead Auditor, BVQI

Shareholding in WHAUP (including spouse and minor)

- None -

Family relationship among Directors and Management

- None -

Current Position in Other Organizations

Listed Companies

- None -

Other Organizations/Companies (Not Listed Companies)

- None -

Work Experience (5-Year Past Experience)

2015	Property Sales Representative Realty Executive Edge, Inc. (Canada)
2011 - 2012	Business owner At Bangkok restaurant Inc. (Canada)

Mr. Varanon Laosuwan

- **Director of Utilities Business Development**
Date Appointed 1 February 2016

Age

42 years

Educational Qualification

- Master of Science (Management of Technology)
Murray State University, KY, U.S.A.
- Bachelor of Engineering (Environmental Engineering),
Chulalongkorn University

Training

- Finance for non-financial Executive certificate (Class 11/2013),
CONC Thammasat Business School

Shareholding in WHAUP (including spouse and minor)

- None -

Family relationship among Directors and Management

- None -

Current Position in Other Organizations

Listed Companies

- None -

Other Organizations/Companies (Not Listed Companies)

- None -

Work Experience (5-Year Past Experience)

2014 - 2016	Business development and marketing communication manager Global Utilities Services Company Limited
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Mr. Punrapee Noparumpa

- **Director of Power Business Development**
Date Appointed 1 August 2016

Age

41 years

Educational Qualification

- Master of Science (Global Market Economics), London School of Economics, University of London, UK
- Bachelor of Economics, London School of Economics, University of London, UK

Training

- Solar Rooftop Power Generation System : Regulation, Design, Installation, Operation and Maintenance 2018, IEEE Thailand
- The Young Executive program 2017, Thailand Energy Academy
- Biomass and Biogas power generation for grid supply, Provincial Authority of Thailand
- Solar Power Generation System : Regulation, Design, Installation, Operation and Maintenance 2017, IEEE Thailand
- Power Generation from Municipal Waste : Regulation, Design, Installation, Operation and Maintenance 2017, IEEE Thailand
- Understanding the Petrochemical Industry & the lurking issues 2010, Petroleum Institute of Thailand
- Gas Engine Based CHP in Thailand 2009, Wartsila Finland Qy
- Natural Gas & Business in its Value Chain 2008, Petroleum Institute of Thailand
- Understanding the Oil Business 2008, Petroleum Institute of Thailand

Shareholding in WHAUP (including spouse and minor)

- None -

Family relationship among Directors and Management

- None -

Current Position in Other Organizations

Listed Companies

- None -

Other Organizations/Companies (Not Listed Companies)

- None -

Work Experience (5-Year Past Experience)

2015 - 2016 Division Manager
Global Power Synergy Public Company Limited

Mr. Sumet Tepkhom

- **Director of International Power Business Development**
Date Appointed 27 June 2022

Age

35 years

Educational Qualification

- Master of Business Administration Program in Global Executive MBA (GEMBA), Thammasat Business School
- Bachelor's Degree, Industrial Chemistry Major, Science Faculty, King Mongkut's Institute of Technology Ladkrabang

Training

- None -

Shareholding in WHAUP (including spouse and minor)

- None -

Family relationship among Directors and Management

- None -

Current Position in Other Organizations

Listed Companies

- None -

Other Organizations/Companies (Not Listed Companies)

- None -

Work Experience (5-Year Past Experience)

2021 - 2022 Head of Business Development
Banpu Vietnam Limited Liability Company
2020 - 2022 Business Development Manager - Renewable Energy
Banpu NEXT Company Limited
2019 - 2020 Business and Project Development Manager
Banpu Power Public Company Limited
2016 - 2019 Sales Engineer, Regional Sales Operation
Vestas Wind Technology (Thailand) Company Limited

Mrs. Rattana Shinawatra

- **Director of Accounting**
(The person assigned to take direct responsibility for accounting supervision)
Date Appointed 1 February 2016

Age

60 years

Educational Qualification

- Bachelor of Accountancy, Ramkhamhaeng University

Training

- Taxation Law Certificate, Judicial Training Institute
- Business Development Program on MBA Approach, Chulalongkorn University
- Leadership Development Program : Passion for Success 2017, CONC Thammasat Business School
- Interesting point of TFRS for NPAs 2021, Alumni Association Faculty of Commerce and Accountancy of Chulalongkorn University
- Seminar course Employee Benefit Calculation using Actuarial Sciences 2022, Accounting 6 hours
- Update TFRS Year 2022, Accounting 7 hours
- Keep pace with Transfer Pricing Laws Year 2022, Other 7 hours

Shareholding in WHAUP (including spouse and minor)

- None -

Family relationship among Directors and Management

- None -

Current Position in Other Organizations

Listed Companies

- None -

Other Organizations/Companies (Not Listed Companies)

- None -

Work Experience (5-Year Past Experience)

2011 - 2016 Assistant Director of Accounting
WHA Industrial Development Public Company Limited

Ms. Nutch Rattanajitbanjong

- **Corporate Secretary**
Date Appointed 1 June 2017

Age

38 years

Educational Qualification

- Master of Computer Science, Computer and Information Technology (English Program), Chulalongkorn University
- Bachelor of Computer Science, University of the Thai Chamber of Commerce
- IEEE Certificate : Computer Science and Information Technology (The International Conference), Beijing Technology and Business University, Beijing, China

Training

- Step-in Leader 2020, South East Asia Center (SEAC)
- The e3 Leader (Engage - Empower - Execute) 2020, South East Asia Center (SEAC)
- The power of Stories to fuel Innovation 2020, Stanford Center for Professional Development
- Empathize and Prototype 2020, Stanford Center for Professional Development
- Innovation at work : Ideation 2020, Stanford Center for Professional Development
- Corruption Risk & Control Program (CRC 1/2019), Thai Institute of Directors (IOD)
- Company Reporting Program (CRP 22/2018), Thai Institute of Directors (IOD)
- Director Accreditation Program (DAP 107/2014), Thai Institute of Directors (IOD)
- Anti-Corruption : The Practical Guide (ACPG 7/2013), Thai Institute of Directors (IOD)
- Effective Minute Taking (EMT 26/2013), Thai Institute of Directors (IOD)
- Board Reporting Program (BRP 11/2013), Thai Institute of Directors (IOD)
- Company Secretary Program (CSP 54/2013), Thai Institute of Directors (IOD)
- Management Psychology (Class 9/2013), Management and Psychology Institute (MPI)
- The Boss (Class 80/2013), Management and Psychology Institute (MPI)
- Fundamental Practice for Corporate Secretary (FPCS 19/2008), Corporate Secretary Club of Thai Listed Companies Association
- Corporate Secretary Development Program (Class 17/2008), Thai Listed Companies Association and The Securities Exchange of Thailand

Shareholding in WHAUP (including spouse and minor)

- None -

Family relationship among Directors and Management

- None -

Current Position in Other Organizations

Listed Companies

- None -

Other Organizations/Companies (Not Listed Companies)

- None -

Work Experience (5-Year Past Experience)

2008 - 2017 Corporate Secretary and Senior Manager of Executive Management Department International Research Corporation Public Company Limited



ATTACHMENT 2

DETAILS OF DIRECTORS OF THE SUBSIDIARIES

POSITIONS HELD BY THE DIRECTOR AND MANAGEMENT OF WHA UTILITIES AND POWER PUBLIC COMPANY LIMITED, SUBSIDIARIES AND ASSOCIATES COMPANIES

Company	Ms. Jareeporn Jarukomsakul	Mr. Weidt Nuchjalearn	Mrs. Punnee Worawuthichongsathit	Mr. Ekajai Tivutanonda	Mr. Nunchai Lowattanatukul	Mr. David Richard Nardone	Mr. Vivat Jiratikarnsakul	Mr. Somkiat Masunthasuwun	Mr. Pajongwit Pongsivapai	Mr. Krailuck Asawachatroj	Mr. Nattapatt Tanboon-ek	Mr. Akarin Prathuangsit	Mr. Praphon Chinudomsab	Mr. Khamhoung Ratsamany	Mr. Varanon Laosuwan	Mr. Punrapee Noparumpa	Mr. Sumet Tepkhom	Mrs. Rattana Shinawatra
WHA Utilities and Power Public Company Limited	X	II/IV	II/IV	II/IV	II	I	I	I,III	I	I		III	III	III	III	III	III	III
WHA Water Company Limited*	X							I				I	I					
WHA Energy Company Limited	X							I				I	I					
WHA Energy 2 Company Limited	X							I				I	I					
WHAUP International Company Limited	X							I				I	I					
WHA Solar Company Limited*	X							I				I	I					
WHAUP (SG) 1 PTE. Limited	X							I				I	I					
WHAUP (SG) 2 PTE. Limited	X							I				I	I					

Remark :

- X = Chairman of the Board of Directors/I = Independent Director/II = Management/IV = Audit Committee
- The first four Management, excluding the CEO, under SEC's Announcement are Mr. Akarin Prathuangsit, Mr. Praphon Chinudomsab, Mr. Khamhoung Ratsamany, Mr. Varanon Laosuwan, Mr. Punrapee Noparumpa, Mr. Sumet Tepkhom, and Mrs. Rattana Shinawatra.
- *Subsidiaries have earnings of more than 10 percent of the total income in the consolidated profit and loss statement of financial 2022.
- Information of positions held by the Director and Management of WHA Utilities and Power Public Company Limited, Subsidiaries and Associated Companies as of 28 February 2023

Company	Ms. Jareeporn Jarukornsakul	Mr. Weidt Nuchjaleam	Mrs. Punnee Worawuthichongsathit	Mr. Ekajai Tivutanonda	Mr. Nunchai Lowattanakul	Mr. David Richard Nardone	Mr. Vivat Jitrikarnsakul	Mr. Somkiat Masunthasuwun	Mr. Pajongwit Pongsiwapai	Mr. Krailuck Asawachatroj	Mr. Natthapatt Tanboon-ek	Mr. Akarin Prathuangsit	Mr. Prapon Chinudomsab	Mr. Khamhoung Ratsamany	Mr. Varanon Laosuwan	Mr. Punrapee Noparumpa	Mr. Sumet Tepkhom	Mrs. Rattana Shinawatra
WHAUP (SG) 2DR PTE. Limited	X																	
WHAUP (SG) 3 PTE. Limited	X																	
WHAUP Nghe An Joint Stock Company	X																	
WHAUP Asia Reclamation Water Company Limited	X																	
WHA Gunkul Green Solar Roof 1 Company Limited											X							
WHA Gunkul Green Solar Roof 3 Company Limited											X							
WHA Gunkul Green Solar Roof 6 Company Limited											X							
WHA Gunkul Green Solar Roof 17 Company Limited											X							
Stella Power 1 Company Limited								X										
Stella Power 1 Company Limited								X										
Eastern Seaboard Clean Energy Company Limited						X												
Chonburi Clean Energy Company Limited						X												
Gheco-One Company Limited																		
Houay Ho Thai Company Limited																		
Houay Ho Power Company Limited																		
Glow IPP Company Limited																		
B. Grimm Power (WHA) 1 Limited																		

Remark :

- X = Chairman of the Board of Directors/I = Director/II = Independent Director/III = Management/IV = Audit Committee
- The first four Management, excluding the CEO, under SEC's Announcement are Mr. Akarin Prathuangsit, Mr. Prapon Chinudomsab, Mr. Khamhoung Ratsamany, Mr. Varanon Laosuwan, Mr. Punrapee Noparumpa, Mr. Sumet Tepkhom, and Mrs. Rattana Shinawatra.
- *Subsidiaries have earnings of more than 10 percent of the total income in the consolidated profit and loss statement of financial 2022.
- Information of positions held by the Director and Management of WHA Utilities and Power Public Company Limited, Subsidiaries and Associated Companies as of 28 February 2023

Company	Ms. Jareeporn Jankornsakul	Mr. Weidt Nuchjalearn	Mrs. Punnee Worawuthichongsathit	Mr. Ekajai Tivutanonda	Mr. Nunchai Lowattanatukul	Mr. David Richard Nardone	Mr. Vivat Jiratkarnsakul	Mr. Somkiat Masunthasuwun	Mr. Pajongwit Pongsvapai	Mr. Krailuck Asawachatroj	Mr. Nattaphatt Tanboon-ek	Mr. Akarin Prathuangsit	Mr. Prapon Chinudomsab	Mr. Khamhoung Ratsamany	Mr. Varanon Laosuwan	Mr. Punrapee Noparumpa	Mr. Sumet Tepkhom	Mrs. Rattana Shinawatra
Gulf WHA MT Natural Gas Distribution Company Limited	Associated Company							X	I		I							
WHA Eastern Seaboard NGD2 Company Limited	Associated Company							X	I		I							
WHA Eastern Seaboard NGD4 Company Limited	Associated Company							X	I		I							
Gulf JP NLL Company Limited	Associated Company							I			I							
Gulf TS1 Company Limited	Associated Company							I	I									
Gulf TS2 Company Limited	Associated Company							I	I									
Gulf TS3 Company Limited	Associated Company							I	I									
Gulf TS4 Company Limited	Associated Company							I	I									
Gulf VTP Company Limited	Associated Company							I	I									
Gulf NLL2 Company Limited	Associated Company							I	I									
Gulf Solar Company Limited	Associated Company							I			I							
Gulf Solar TS1 Company Limited	Associated Company							I			I							
Gulf Solar TS2 Company Limited	Associated Company							I			I							
Gulf Solar BV Company Limited	Associated Company							I			I							
Gulf Solar KKS Company Limited	Associated Company							I			I							
Cua Lo Water Supply Joint Stock Company	Associated Company							I					I					
Duong River Surface Water Plant Joint Stock Company	Associated Company							I			I							

Remark :

- X = Chairman of the Board of Directors/I = Director/II = Independent Director/III = Management/IV = Audit Committee
- The first four Management, excluding the CEO, under SEC's Announcement are Mr. Akarin Prathuangsit, Mr. Prapon Chinudomsab, Mr. Khamhoung Ratsamany, Mr. Varanon Laosuwan, Mr. Punrapee Noparumpa, Mr. Sumet Tepkhom, and Mrs. Rattana Shinawatra.
- *Subsidiaries have earnings of more than 10 percent of the total income in the consolidated profit and loss statement of financial 2022.
- Information of positions held by the Director and Management of WHA Utilities and Power Public Company Limited, Subsidiaries and Associated Companies as of 28 February 2023



ATTACHMENT 3

DETAILS OF THE HEAD OF INTERNAL AUDIT AND HEAD OF COMPLIANCE

DETAILS OF HEAD OF INTERNAL AUDIT

Name-Surname	Age (yrs)	Education/Training Record	Working Experience (5-Year Past Experience)		
			Period	Position	Company/Type of Business
Mr. Supachate Kunaluckkul	42	Education <ul style="list-style-type: none"> Thammasart University - Master Degree in Accounting Srinakharinwirot University - Bachelor Degree in Accounting Professional Certification <ul style="list-style-type: none"> Certified Internal Auditor (CIA) Certified Information System Auditor (CISA) Certification in Control Self - Assessment (CCSA) Certified Public Accountant (CPA) Training <ul style="list-style-type: none"> Issues and case studies related to PDPA compliance - Federation of Accounting Professions Integrating Sustainability into Internal Audit - Institute of Internal Auditors Thailand 	2015 - present	Partner	KPMG Phoomchai Business Advisory Ltd.
			2014 - 2015	Associate Director	KPMG Phoomchai Audit Ltd.
			2012 - 2014	Manager	KPMG China, Guangzhou Office
			2010 - 2012	Manager	KPMG Phoomchai Audit Ltd.

DETAILS OF HEAD OF COMPLIANCE

Name-Surname	Age (yrs)	Education/Training Record	Working Experience (5-Year Past Experience)		
			Period	Position	Company/Type of Business
Mr. Jirayu Chompoorat	43	Education <ul style="list-style-type: none"> Master of Laws (LL.M.)/International Business Law in EU, Universität Augsburg, Germany Bachelor of Laws, Thammasat University Professional Certification <ul style="list-style-type: none"> Data Protection Officer, PDPA, Digital Council of Thailand Notarial Services Attorney, Thailand Lawyer License, Thailand Training <ul style="list-style-type: none"> Thailand-Data Protection Officer, T-DPO (Level 4) 	2022 - Now	<ul style="list-style-type: none"> Senior Manager Compliance 	<ul style="list-style-type: none"> WHA Utilities & Power PLC
			2013 - 2022	<ul style="list-style-type: none"> Legal And Government Compliance Manager 	<ul style="list-style-type: none"> Bangkok Cogeneration Co., Ltd./ Natural Gas Power Station
			2011 - 2013	<ul style="list-style-type: none"> Attorney at Law, Partner 	<ul style="list-style-type: none"> Siam International Legal Advisors/ Legal Consultancy
			2007 - 2010	<ul style="list-style-type: none"> Attorney at Law, Associate 	<ul style="list-style-type: none"> Roedl and Partner/Legal Consultancy
			2002 - 2004	<ul style="list-style-type: none"> Attorney at Law, Associate 	<ul style="list-style-type: none"> C.B. Law office/Legal Consultancy
			Scope of duties <ul style="list-style-type: none"> Monitoring and implement corporate compliance rules, regulations, and policies to complied company activities with the laws. Provide counsel on corporate compliance matters to staffs and management team to ensure all compliance risks must be managed, controlled, and mitigated. Corporate documents control for importance document such as agreements, permits, power of attorney and other significant legal documents. 		



ATTACHMENT 4

ASSETS USED IN BUSINESS OPERATIONS AND DETAILS OF ASSET VALUATION

1. ASSETS USED IN BUSINESS OPERATIONS

1.1 PROPERTY, PLANT AND EQUIPMENT

As of 31 December 2022, the assets used in business operations of WHAUP and its subsidiaries with net book values after accumulated depreciation as shown in the consolidated financial statement was Baht 6,645.42 million. Details are as follows :

(Unit : Million Baht)

Description	Net book value	Company	Subsidiaries	Ownership	Obligatio
Right-of-use land	350.86	235.47	115.39	Own rights	No obligation
Building improvements	46.57	35.39	11.18	Owned/ Own rights	No obligation
Building and structure	201.93	196.88	5.05	Owned/ Own rights	No obligation
Tools and equipment	92.38	74.78	17.60	Owned/ Own rights	No obligation
Raw water pipes	1,948.73	1,734.05	214.68	Owned/ Own rights	No obligation
Industrial water production systems	1,216.25	663.23	553.02	Owned/ Own rights	No obligation
Wastewater treatment systems	405.80	304.06	101.74	Owned/ Own rights	No obligation
Vehicles	5.10	5.10	-	Owned	No obligation
Solar systems	1,572.24	-	1,572.24	Owned	No obligation
Construction in progress	805.56	4.76	800.80	Owned	No obligation
Total	6,645.42	3,253.72	3,391.70		

1.2 INTANGIBLE ASSETS

Intangible assets consist of rights to operate and distribute the industrial water and to provide waste water treatment service and right to use computer software and water plant maintenance program. Details of intangible assets as of 31 December 2022 are as follows :

(Unit : Million Baht)

Description	Net book value	Company	Subsidiaries
Right to operate and distribute the industrial water and to provide waste water treatment service	1,893.96	1,852.82	41.14
Right to use computer software and water plant maintenance program	13.78	10.85	2.93
Total	1,907.74	1,863.67	44.07

1.3 INVESTMENTS IN SUBSIDIARIES

The Company has investments in subsidiaries such as WHA Water Co., Ltd., WHA Energy Co., Ltd., WHA Energy 2 Co., Ltd., WHA Solar Co., Ltd., WHAUP International Co., Ltd., WHAUP (SG) 1 PTE LTD. WHAUP (SG) 2 PTE LTD. WHAUP (SG) 3 PTE LTD. WHAUP (SG) 2DR PTE LTD. and WHAUP Nghe An Joint Stock Company. Details of investments in subsidiaries as of 31 December 2022 are as follows :

Entity name	Investment at cost method (Million Baht)	Ownership interest (%)	Paid-up share capital (Million Baht)	Nature of business
WHAWT*	301.50	99.99	300.00	Water resources, development and management
WHAEG*	9,178.00	99.99	9,178.00	Holding Company
WUPIN*	45.00	99.99	45.00	Holding Company
WHAET	7,269.75	99.99	4,250.00	Holding Company
WHASL	750.00	99.99	750.00	Generate and supply electricity
WUPS1	43.09	100.00	42.98	Holding Company
WUPS2	45.97	100.00	42.73	Holding Company
WUPS3	3.46	100.00	3.71	Holding Company
WUPSD	3.46	100.00	3.03	Holding Company
WUPNA	57.78	99.99	55.92	Produce and distribute the industrial water, provide wastewater treatment service

Remark *Directly held by the company

1.4 INVESTMENTS IN ASSOCIATES

The Company has investments in associates which the ownership interest held by our subsidiaries, WHA Energy Co., Ltd., WHA Solar Co., Ltd., WHA Energy 2 Co., Ltd., WHAUP Nghe An Joint Stock Company and WHAUP (SG) 2DR PTE LTD. Details of investment in associates as of 31 December 2022 are as follows :

Entity name	Investment at equity method (Million Baht)	Ownership interest (%)	Paid-up share capital (Million Baht)	Nature of business
Gulf JP NLL	366.89	25.01	1,384.00	Generate and supply electricity
Gulf Solar	15.33	25.01	47.44	Holding Company
- Gulf Solar KKS*		25.01	14.67	Generate and supply electricity
- Gulf Solar BV*		25.01	7.66	Generate and supply electricity
- Gulf Solar TS1*		25.01	7.38	Generate and supply electricity
- Gulf Solar TS2*		25.01	5.55	Generate and supply electricity
Gulf VTP	502.34	25.01	1,610.00	Generate and supply electricity
Gulf TS1	506.18	25.01	1,685.00	Generate and supply electricity
Gulf TS2	497.61	25.01	1,690.00	Generate and supply electricity
Gulf TS3	454.25	25.01	1,520.00	Generate and supply electricity
Gulf TS4	446.11	25.01	1,470.00	Generate and supply electricity
Gulf NLL2	441.48	25.01	1,440.00	Generate and supply electricity
BPWHA-1	420.47	25.01	1,533.56	Generate and supply electricity
Gheco-I	7,568.45	35.00	11,624.00	Generate and supply electricity
Cua Lo	8.76	47.31	66.18	Production and distribution of water supply
SDWTP	2,174.48	34.00	1,292.50	Production and distribution of water supply
Total	13,402.35			

Remarks *Indirect associates held by the Company's subsidiary

1.5 INVESTMENT IN JOINT VENTURES

The Company has investment in joint ventures which the ownership interest held by our subsidiaries, WHA Energy Co., Ltd., WHA Solar Co., Ltd., WHA Energy 2 Co., Ltd., and WHA Water Co., Ltd., Details of investment in joint ventures as of 31 December 2022 are as follows :

Entity name	Investment at equity method (Million Baht)	Ownership interest (%)	Paid-up share capital (Million Baht)	Nature of business
Investment in joint ventures with Glow group				
- ESCE	337.50	33.33	1,017.81	Generate and supply electricity
- CCE*		33.33	989.00	Generate and supply electricity
- HHTC	259.18	51.00	422.15	Holding Company
- HHPC*		12.75	USD 40 Million	Generate and supply electricity
Investment in joint ventures with Gunkul Group	58.28	74.99	56.50	Generate and supply electricity
Investment in joint ventures with Gulf Group	147.91	35.00	454.00	Sully natural gas
WHAUPAIE	17.69	60.00	31.50	Distribution of water supply
Stella Power 1 & Stella Power 2	97.78	51.00	206.22	Generate and supply electricity
Total	918.34			

Remarks *Indirect joint ventures held by the Company's subsidiary

2. ASSET VALUATION

- None -



ATTACHMENT 5

FULL VERSION OF THE CORPORATE GOVERNANCE POLICY AND GUIDELINES,
CODE OF CONDUCT, CHARTER OF BOARD OF DIRECTORS AND SUB-COMMITTEE

Corporate Governance Policy and Guidelines, Code of Conduct, Charter of Board of Directors and Sub-Committee
(Full version) Revealing on Company's website

<https://www.wha-up.com/Uploads/elFinder/pdf/cg/20230111-whaup-cg-policy-en.pdf>

<https://www.wha-up.com/Uploads/elFinder/pdf/cg/20220224-whaup-cg-code-of-conduct-en.pdf>

<https://www.wha-up.com/Uploads/elFinder/pdf/cg/20230227-whaup-cg-bod-charter-en.pdf>

<https://www.wha-up.com/Uploads/elFinder/pdf/cg/20190227-whaup-cg-executive-charter-en.pdf>

<https://www.wha-up.com/Uploads/elFinder/pdf/cg/20230227-whaup-cg-audit-charter-en.pdf>

<https://www.wha-up.com/Uploads/elFinder/pdf/cg/20210816-whaup-cg-cg-sd-charter-en.pdf>

<https://www.wha-up.com/Uploads/elFinder/pdf/cg/20210816-whaup-cg-nomination-charter-en.pdf>

<https://www.wha-up.com/Uploads/elFinder/pdf/cg/20210816-whaup-cg-risk-charter-en.pdf>



ATTACHMENT 6

REPORT OF THE AUDIT COMMITTEE

The report of Audit Committee is shown in 56-1 One Report in Key Good Corporate Governance Implementation.



DEFINITION AND ABBREVIATION

The Company or WHAUP	:	WHA Utilities and Power Public Company Limited
The Company Group	:	WHA Utilities and Power Public Company Limited and its subsidiaries
WHA	:	WHA Corporation Public Company Limited
WHA Group	:	WHA Corporation Public Company Limited, subsidiaries and associated companies
WHAID	:	WHA Industrial Development Public Company Limited
WHAID Group	:	WHA Industrial Development Public Company Limited, subsidiaries and associated companies
WHAWT	:	WHA Water Company Limited
WHAEG	:	WHA Energy Company Limited
WHAET	:	WHA Energy 2 Company Limited
WUPIN	:	WHAUP International Company Limited
WHASL	:	WHA Solar Company Limited
WUPS1	:	WHAUP (SG) 1 PTE. Limited (A company incorporated in Singapore)
WUPS2	:	WHAUP (SG) 2 PTE. Limited (A company incorporated in Singapore)
WUPSD	:	WHAUP (SG) 2DR PTE. Limited (A company incorporated in Singapore)
WUPS3	:	WHAUP (SG) 3 PTE. Limited (A company incorporated in Singapore)
WUPNA	:	WHAUP Nghe An Joint Stock Company (A company incorporated in Vietnam)
WHAUP AIE	:	WHAUP Asia Reclamation Water Company Limited
WHA Gunkul 1	:	WHA Gunkul Green Solar Roof 1 Company Limited
WHA Gunkul 3	:	WHA Gunkul Green Solar Roof 3 Company Limited
WHA Gunkul 6	:	WHA Gunkul Green Solar Roof 6 Company Limited
WHA Gunkul 17	:	WHA Gunkul Green Solar Roof 17 Company Limited
STL1	:	Stella Power 1 Company Limited
STL2	:	Stella Power 2 Company Limited
CUA LO	:	Cua Lo Water Supply Joint Stock Company (A company incorporated in Vietnam)
SDWTP	:	Duong River Surface Water Plant Joint Stock Company (A company incorporated in Vietnam)
ESCE	:	Eastern Seaboard Clean Energy Company Limited
CCE	:	Chonburi Clean Energy Company Limited
Gheco-I	:	Gheco-I Company Limited
HHTC	:	Houay Ho Thai Company Limited
HHPG	:	Houay Ho Power Company Limited (A company incorporated in Lao People's Democratic Republic)
GIPP	:	Glow IPP Company Limited

BPWHA-1	:	B.Grimm Power (WHA) 1 Company Limited
Gulf JP NLL	:	Gulf JP NLL Company Limited
Gulf NLL 2	:	Gulf NLL2 Company Limited
Gulf TS 1	:	Gulf TS1 Company Limited
Gulf TS 2	:	Gulf TS2 Company Limited
Gulf TS 3	:	Gulf TS3 Company Limited
Gulf TS 4	:	Gulf TS4 Company Limited
Gulf VTP	:	Gulf VTP Company Limited
Gulf Solar	:	Gulf Solar Company Limited
Gulf Solar BV	:	Gulf Solar BV Company Limited
Gulf Solar TS 1	:	Gulf Solar TS1 Company Limited
Gulf Solar TS 2	:	Gulf Solar TS2 Company Limited
Gulf Solar KKS	:	Gulf Solar KKS Company Limited
Gulf WHA MT	:	Gulf WHA MT Natural Gas Distribution Company Limited
WHA NGD2	:	WHA Eastern Seaboard NGD2 Company Limited
WHA NGD4	:	WHA Eastern Seaboard NGD4 Company Limited
WHA CIE 1	:	WHA Chonburi Industrial Estate 1
WHA CIE 2	:	WHA Chonburi Industrial Estate 2
ESIE	:	Eastern Seaboard Industrial Estate (Rayong)
WHA ESIE 1	:	WHA Eastern Seaboard Industrial Estate 1
WHA ESIE 2	:	WHA Eastern Seaboard Industrial Estate 2
WHA ESIE 3	:	WHA Eastern Seaboard Industrial Estate 3
WHA ESIE 4	:	WHA Eastern Seaboard Industrial Estate 4
WHA EIE	:	WHA Eastern Industrial Estate (Map Ta Phut)
WHA Rayong 36	:	WHA Rayong 36 Industrial Estate
WHA RIL	:	WHA Rayong Industrial Land
WHA SIL	:	WHA Saraburi Industrial Land
WHA LP 1	:	WHA Logistic Park 1
EECI	:	Eastern Economic Corridor of Innovation.
Utilities business	:	Water business and providing related utilities service e.g. gas distribution business or waste management business
Water business	:	Distribution of raw water, production and distribution of industrial water and wastewater treatment business
Power business	:	Generation and distribution of electricity business
COD	:	Commercial Operation Date
SCOD	:	Scheduled Commercial Operation Date
MW	:	Megawatt
TPH	:	Ton per hour
RT	:	Ton of Refrigeration

IPP	:	Independent Power Producer
SPP	:	Small Power Producer
VSPP	:	Very Small Power Producer
CLMV	:	Cambodia, Laos, Myanmar, and Vietnam
IEAT	:	Industrial Estate Authority of Thailand
ERC	:	Energy Regulatory Commission
NEPO	:	National Energy Policy Office
EGAT	:	Electricity Generating Authority of Thailand
PEA	:	Provincial Electric Authority
MEA	:	Metropolitan Electric Authority
PWA	:	Provincial Waterworks Authority
MWA	:	Metropolitan Waterworks Authority
Office of the SEC	:	Office of the Securities and Exchange Commission of Thailand
SET	:	Stock Exchange of Thailand
BOI	:	Board of Investment of Thailand
EBITDA	:	Earnings before interest, taxes, depreciation and amortization
CAGR	:	Cumulative Annual Growth Rate
GPSC Group	:	Global Power Synergy Public Company Limited, subsidiaries and associated companies
Gulf Group	:	Gulf Energy development Company Limited, subsidiaries and associated companies
B.Grimm Power Group	:	B.Grimm Power Company Limited, subsidiaries and associated companies
Gunkul Group	:	Gunkul Engineering Public Company Limited, subsidiaries and associated companies





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