

INTEGRATED UTILITIES AND POWER SERVICE PROVIDERS

ANNUAL REPORT 2019



WHA UTILITIES AND POWER PUBLIC COMPANY LIMITED



YOUR ULTIMATE
SOLUTION PARTNER IN

UTILITIES & POWER

WITH ENVIRONMENT CARE

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

- To develop world class utilities and power solutions fitting customers' needs.
- 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 (CLMV Countries)
- To continuously develop human resources competencies.
- To nurture an innovative culture in the organization.
- To add value to communities and the environment with good corporate governance and sustainable development strategies.

GOAL

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 particularly Cambodia, Laos, Myanmar and Vietnam (the CLMV countries) and expand to related businesses in order to widen its range of products and services.

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A photograph of a large industrial facility, likely a power plant or refinery, featuring multiple levels of steel structures, yellow safety railings, and large silver storage tanks. The sky is clear and blue.

WE INVEST IN **POWER BUSINESS**

WE ARE THE
LEADER IN UTILITIES
SERVICES FOR THE
**INDUSTRIAL ESTATES
IN THAILAND**

FINANCIAL HIGHLIGHT

PROFIT AND LOSS

(million Baht)

Profit and Loss	2017	2018	2019
Revenue from sales and services	1,633.8	1,708.3	1,857.2
Cost of sales and services	(1,092.4)	(1,120.0)	(1,164.4)
Gross profit	541.4	588.3	692.8
Share of profit from investments in associates and joint ventures	1,936.1	2,047.4	1,881.1
Net profit attributable to owners of the parent	1,980.9	2,251.9	2,137.2
Earnings per share (Baht/share)	0.54	0.59	0.56

BALANCE SHEET

(million Baht)

Balance Sheet	2017	2018	2019
Total Assets	21,378.2	23,773.3	26,418.7
Total Liabilities	8,801.2	9,724.0	12,859.5
Total Equity	12,577.0	14,049.3	13,559.2

FINANCIAL RATION

(million Baht)

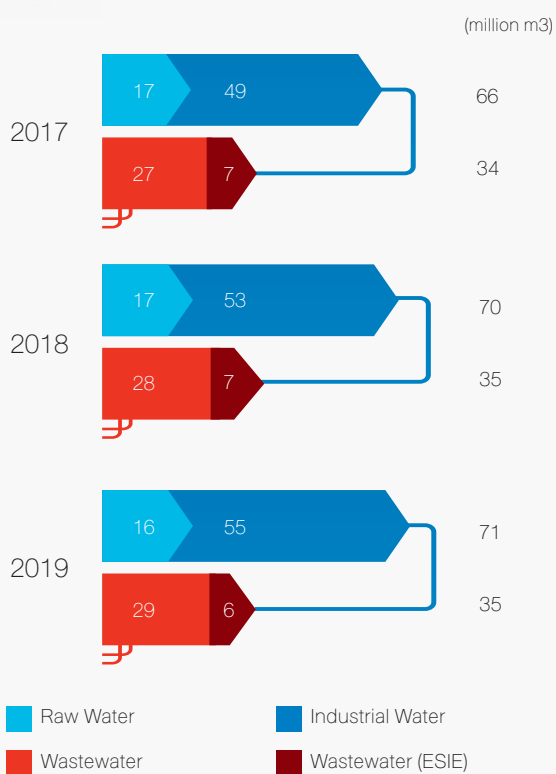
Financial Ration	2017	2018	2019
Gross Profit Margin	33.1%	34.4%	37.3%
Net Profit Margin ¹	53.5%	57.5%	55.0%
Return on Equity ²	19.8%	16.9%	15.48%
Debt/Equity Ratio	0.70x	0.69x	0.95x
Net Interest-bearing Debt/Equity Ratio	0.58x	0.58x	0.81x

¹ 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

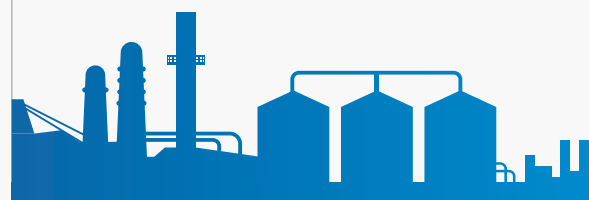
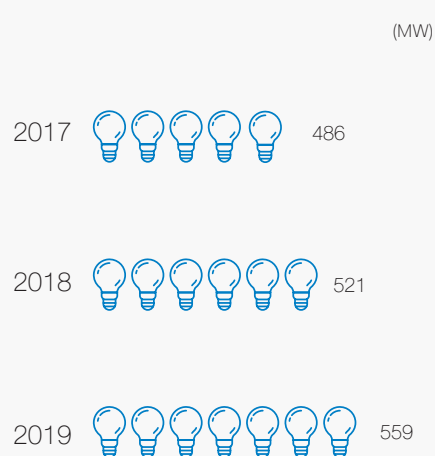
² Return on Equity is calculated by dividing the Net Profit attributable to Owners of the Parent by average equity



TOTAL SALE & MANAGEMENT VOLUME

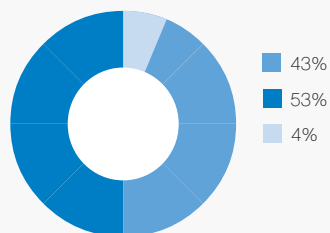


TOTAL EQUITY MW

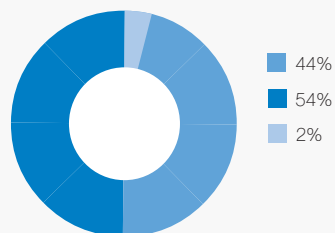


REVENUE STRUCTURE

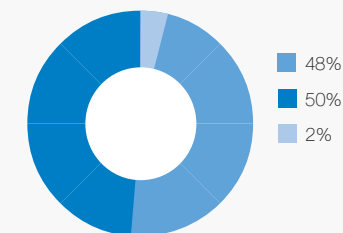
2017



2018



2019



Revenue from Utilities Business

Share of Profit and Dividend from Power Business

Other Income*

Note *Other Income is interest income from loan to Gheco-One in proportion to the shareholding



MESSAGE FROM CHAIRMAN

In 2019, the WHAUP Group succeeded in developing projects and expanding businesses in many important areas. Regarding the energy business, we successfully expanded many businesses, such as the development of industrial waste power plants, Chonburi Clean Energy, with a capacity of 8.63 megawatts. Such project has been commercially implemented in the previous 4th quarter, which is the electricity generation that does not increase greenhouse gas emissions and can eliminate up to 100,000 tons of waste per year. It is also a model of environmentally friendly industrial waste disposal which supports industrial growth in the Eastern Economic Corridor concurrently. Regarding the project of power generation from solar rooftop for direct sale to customers (Private PPA), the Company entered into 12 additional electricity purchase agreements in 2019 with a total capacity of 21.5 megawatts. They will gradually start commercial operations in 2020, which allow the Company to have a total capacity of 30.9 megawatts. Plus, the Company still has a goal to develop such project in an amount of 100 megawatts by 2022. In the past 4th quarter, we also entered into a MOU with the Provincial Electricity Authority to jointly study the Smart Grid and Peer-to-Peer Energy Trading project, which will focus on the study of industrial estates in the WHA Group. It is estimated to be completed in 2020.

Regarding the public utility business, it is considered that the Company had significant developments, both domestic and international business expansion, in the previous year. In terms of domestic business expansion, the Company initiated the Reclamation Water Project and entered into a purchase agreement and started selling Demineralized Water to customers in the WHA Eastern Industrial Estate, which is the highly pure water without minerals suitable for distribution to the power generation and petrochemical industries. As a result, it was still a product with market opportunities that the Company was confident that it could be expanded more in the future. On the subject of the international business expansion, the Company had successfully entered the water business in Vietnam. In the previous 4th quarter, the Company invested in the Duong River Surface Water Plant Company, which is one of Hanoi's leading water supply providers, by purchasing 34% of shares. As for this project, currently the total water supply capacity is about 110 million cubic meters per year. The Company has foreseen the potential to expand the water supply capacity of such company in the future due to its appropriate location and the increasing demand of clean water to replace the current consumption of groundwater. Previously, the Company invested in Cua Lo Water Supply Company Limited in the proportion of 47.3% in order to invest in the water supply production and distribution in Nghe An city and WHA Industrial Zone 1 - Nghe An.

In addition to the success of the Company's business operations, the company also focuses on the promotion of stable and sustainable business growth under good corporate governance, transparency of business operations, and corporate responsibility towards society, community and environment. The Company announced its intention to become a member of the Thailand's Private Sector Collective Action Coalition Against Corruption (CAC) on March 22, 2019 and was certified as a member of such project on November 4, 2019.

Lastly, on behalf of the Board of Director of WHA Utilities and Power (Public) Company Limited, I would like to thank all shareholders and business partners who has always trusted and supported the growth of the Company, including the Board of executives and employees that have worked together to make the Company the great success in 2019.

Ms. Jareeporn Jarukornsakul
Chairman of the Board of Directors

MESSAGE FROM CEO

In 2019, the Company had good overall operating results from the business of water for industry and the energy business although the overall economic condition of the nation had grown slightly. Regarding the business of water for industry, the Company's sales of all types of water for industry increased to 74.3 million cubic meters and the total volume of waste water treatment services was 35.4 million cubic meters in all industrial estates. In the meantime, the Company expanded the Wastewater Reclamation Project at WHA Eastern Industrial Estate so the production of industrial water from wastewater was 10,000 cubic meters a day. In addition, Reclaimed Water was applied to produce Demineralized Water in order to sell it to customers in the power plant industry or the petrochemical industry. Demin Water was initially sold to customers at the WHA Eastern Industrial Estate in the previous 4th quarter. Regarding the foreign investment, the Company purchased shares of the water supply company in Cua Lo, which had the water supply capacity of 13,000 cubic meters per day (or 4.68 million cubic meters per year) in the proportion of 47% in February in order to be a part of the water supply for Nghe An Industrial Estate where the Company is the water service provider. Later, in September the Company purchased shares of Duong River Surface Water Plant JSC in Hanoi, which had the water supply capacity of 300,000 cubic meters a day for Phase 1 (or 108 million cubic meters a year) and had produced commercial water supply of Phase 1 since September, 2019 in the proportion of 34%. It is the water supply company providing services in the east region of Hanoi. This is regarded as the first and important step that allows the Company to enter the water supply business in Vietnam.

Regarding the overview of energy business, the Company realized the increasing share of profits from the energy business compared to the year 2018, which was based on the expectation, due to the commercial operation of the SPP power plant with the installed capacity of 127 megawatts at WHA RIL industrial zone on January 1, 2019. In addition, the joint venture of the Company could start the commercial operation of industrial waste power plants (Industrial Waste to Energy) with the installed capacity of 8.63 megawatts on November 7, 2019 (which was 2 months earlier than the schedule). Regarding the business of power generation from solar rooftop for providing electricity service from clean energy, it had grown continuously up to 21.4 megawatts due to the signing of the power purchase agreement with industrial customers, which gradually started commercial operations at the end of 2019 and next year. As for the natural gas retail business, the company's joint venture was able to start commercial operations in the WHA Eastern Seaboard Industrial Estate 4 (WHA ESIE 4) according to its goal in 2019.

As of 31 December 2019, the Company's total assets, total liabilities, and shareholders' equity were 26,419 million Baht, 12,859 million Baht, and 13,559 million Baht, respectively. The total debt to equity ratio was 0.95 times and the net interest-bearing debt to equity ratio equaled to 0.81 times.

Lastly, on behalf of the management team of WHA Utilities and Power (Public) Company Limited, I would like to thank the Board of Directors for their support and supervision of the Management's operations, including shareholders who have always trusted in the Company's management and all employees for their efforts and dedications to perform operations and achieve the specified goals.



Mr. Wisate Chungwatana

Chief Executive Officer





BOARD OF DIRECTORS

1. 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

2. MR. DAVID RICHARD NARDONE

- Director
- Executive Committee member
- Risk Management Committee member

3. MR. VIVAT JIRATIKARNSAKUL

- Director
- Executive Committee member
- Corporate Governance Committee member

4. MR. WISATE CHUNGWATANA

- Director
- Executive Committee member



**5. MR. WEIDT
NUCHJALEARN**

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

**6. MR. EKAJAI
TIVUTANOND**

- Independent Director
- Audit Committee member
- Corporate Governance Committee member
- Nomination and Remuneration Committee member

**7. MRS. PUNNEE
WORAWUTHICHONGSATHIT**

- Independent Director
- Audit Committee member
- Chairman of the Corporate Governance Committee

**8. MR. SURATHIAN
CHAKTHRANONT**

- Director
- Risk Management Committee member



BOARD OF DIRECTORS

1. 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

Age : 52 years

Date of Appointment as a Director

- 25 March 2015

Educational Qualification

- Master of Business Administration, Bangkok University
- Honorary Doctorate (Logistics and Supply Chain Management), Christian University of Thailand
- Bachelor of Science (Public Health), Mahidol University

Training

- Executive Program in Energy Literacy for a Sustainable Future (Class 9/2018), Thailand Energy Academy (TEA)
- National Defense Course (Class 60/2018), National Defense Collage
- Corporate Governance for Capital Market Intermediaries (CGI 17/2016), Thai Institute of Directors (IOD)
- Director Accreditation Program (DAP 210/2015), Thai Institute of Directors (IOD)
- Senior Executives on Justice Administration Program (Class 20/2015), National Justice Academy, Office of Judiciary
- Top Executive Program (Class 18/2014), Capital Market Academy (CMA)
- Director Certification Program (DCP 94/2012), Thai Institute of Directors (IOD)

Current Position

Other Listed Company

- Chairman of the Board of Directors, WHA Corporation PLC.
- Chairman of the Executive Committee, WHA Corporation PLC.
- Group Chief Executive Officer, WHA Corporation PLC.
- Director, Siam Commercial Bank PCL.

Other Company/Organization

- Director in 68 Other Organizations

Shareholding as of 31 December 2019

- Own : 34,499,800 shares (0.902%)
- Spouse : None
- Minor children : 17,081,813 shares (0.447%)
- Legal entity hold shares at an amount exceeding 30% : 72,581,665 shares (1.898%)

Total Shareholding : 124,163,278 shares (3.246%)

Family relationship among Directors and Management : None

2. Mr. David Richard Nardone

Director
Executive Committee member
Risk Management Committee member

Age : 64 years

Date of Appointment as a Director

- 30 June 2008

Educational Qualification

- Master of Business Administration, Northeastern University, Boston, U.S.A.

Training

- Director, Certification Program (DCP 57/2005), Thai Institute of Director (IOD)

Current Position

Other Listed Company

- Vice Chairman of the Board of Directors, WHA Corporation PLC.
- Executive Committee member, WHA Corporation PLC.

Other Company/Organization

- Director in 31 Other Organizations

Shareholding as of 31 December 2019

- Own : 100,000 shares (0.003 %)
- Spouse : None
- Minor children : None
- Legal entity hold shares at an amount exceeding 30% : None

Family relationship among Directors and Management : None

3. Mr. Vivat Jiratikarnsakul

Director
Executive Committee member
Corporate Governance Committee member

Age : 63 years

Date of Appointment as a Director

- 25 March 2015

Educational Qualification

- Bachelor of Engineering (Sanitary Engineering),
Chulalongkorn University

Training

- Director Accreditation Program (DAP 2/2003),
Thai Institute of Directors (IOD)
- Director Certification Program (DCP 38/2003),
Thai Institute of Directors (IOD)
- Anti-Corruption for Executive Program (ACEP 2/2014),
Thai Institute of Directors (IOD)
- OD Luncheon briefing 1/2013: Thailand Economic Outlook 2013

Current Position

Other Listed Company

- Director, WHA Corporation PLC.
- Executive Committee member, WHA Corporation PLC.

Other Company/Organization

- Director in 20 Other Organizations

Shareholding as of 31 December 2019

- Own : None
- Spouse : None
- Minor children : None
- Legal entity hold shares at an amount exceeding 30% : None

Family relationship among Directors and Management : None

4. Mr. Wisate Chungwatana

Director
Executive Committee member

Age : 52 years

Date of Appointment as a Director

- 28 March 2016

Educational Qualification

- Master of Science (Mechanical Engineering),
Missouri University of Science and Technology, Rolla, MO, U.S.A.
- Bachelor of Engineering (Mechanical Engineering),
Chulalongkorn University

Training

- Top Executive Program (Class 28/2019),
Capital Market Academy (CMA)
- Director Certification Program (DCP 189/2014),
Thai Institute of Directors (IOD)
- Petroleum Development and Operations, Stavanger, Norway
- Management of Electric Power Utilities, Stockholm, Sweden

Current Position

Other Listed Company

- None

Other Company/Organization

- Director in 36 Other Organizations

Shareholding as of 31 December 2019

- Own : 100,000 shares (0.003 %)
- Spouse : None
- Minor children : None
- Legal entity hold shares at an amount exceeding 30% : None

Family relationship among Directors and Management : None



5. Mr. Weidt Nuchjalearn

Independent Director

Chairman of the Audit Committee

Chairman of the Nomination and Remuneration Committee

Age : 66 years

Date of Appointment as a Director

- 2 December 2015

Educational Qualification

- Master of Business Administration, Thammasat University
- Bachelor of Science (Agricultural Economics), Kasetsart University

Training

- Financial Executive Development Program (Class 14/2016), Thai Institute of Banking and Finance Association
- Director Accreditation Program (DAP SEC/2015), Thai Institute of Directors (IOD)
- Role of the Chairman Program (RCP 31/2013), Thai Institute of Directors (IOD)
- Top Executive Program (Class 18), Capital Market Academy (CMA)
- Top Executive Program in Commerce and Trade: TEPCoT (Class 3/2010), Commerce Academy
- Commercial Credit Skills Assessment, Chulalongkorn University

Current Position

Other Listed Company

- Advisor, Dhipaya Insurance PLC.
- Independent Director/Chairman of the Audit Committee, Thaifoods Group PLC.

Other Company/Organization

- Director in 7 Other Organizations

Shareholding as of 31 December 2019

- Own : None
- Spouse : None
- Minor children : None
- Legal entity hold shares at an amount exceeding 30% : None

Family relationship among Directors and Management : None

6. Mr. Ekajai Tivutanond

Independent Director

Audit Committee member

Corporate Governance Committee member

Nomination and Remuneration Committee member

Age : 67 years

Date of Appointment as a Director

- 2 December 2015

Educational Qualification

- Master of Laws, Columbia University, New York, U.S.A.
- Bachelor of Laws (First Class Honor), Thammasat University
- Thai Bar Association

Training

- Advance Audit Program (AACP 32/2019), Thai Institute of Directors (IOD)
- Director Accreditation Program (DAP 127/2016), Thai Institute of Directors (IOD)

Current Position

Other Listed Company

- None

Other Company/Organization

- Director in 1 Other Organization

Shareholding as of 31 December 2019

- Own : None
- Spouse : None
- Minor children : None
- Legal entity hold shares at an amount exceeding 30% : None

Family relationship among Directors and Management : None

7. Mrs. Punnee Worawuthichongsathit

Independent Director
Audit Committee member
Chairman of the Corporate Governance Committee

Age : 67 years

Date of Appointment as a Director

- 2 December 2015

Educational Qualification

- Master of Accountancy, Chulalongkorn University
- Bachelor of Accountancy, Chulalongkorn University

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)
- Driving Company Success with IT Governance (ITG 4/2017), Thai Institute of Directors (IOD)
- Ethical Leadership Program (ELP 2/2015), Thai Institute of Directors (IOD)
- Anti-Corruption the Practical Guide (ACPG 10/2014), Thai Institute of Directors (IOD)
- Anti-Corruption for Executive Program (ACEP 10/2014), Thai Institute of Directors (IOD)
- Role of the Nomination & Governance Committee (RNG 1/2011), Thai Institute of Directors (IOD)
- Role of the Chairman Program (RCP 25/2011), Thai Institute of Directors (IOD)
- DCP Refresher Course (RE DCP 2/2009), Thai Institute of Directors (IOD)
- Monitoring Fraud Risk Management (MFM 1/2009), Thai Institute of Directors (IOD)
- Role of the Compensation Committee (RCC 7/2008), Thai Institute of Directors (IOD)
- Chartered Director Class (CDC 7/2008), Thai Institute of Directors (IOD)
- Monitoring the System of Internal Control and Risk Management (MIR 2/2008), Thai Institute of Directors (IOD)
- Monitoring the Internal Audit Function (MIA 1/2007), Thai Institute of Directors (IOD)
- Improve the Quality of Financial Reporting (MFR 5/2007), Thai Institute of Directors (IOD)
- Audit Committee Program (ACP 2/2004), Thai Institute of Directors (IOD)
- Director Accreditation Program (DAP 2/2003), Thai Institute of Directors (IOD)
- Director Certification Program (DCP 38/2003), Thai Institute of Directors (IOD)

Current Position

Other Listed Company

- Chairman of the Directors/Independent Director, Mono Technology PLC.
- Independent Director/Audit Committee member, Saha Pathana Inter-Holding PLC.
- Independent Director/Audit Committee member, Thai Wacoal PLC.
- Independent Director/Audit Committee member, The Brooker Group PLC.

Other Company/Organization

- Director in 5 Other Organizations

Shareholding as of 31 December 2019

- Own : None
- Spouse : None
- Minor children : None
- Legal entity hold shares at an amount exceeding 30% : None

Family relationship among Directors and Management : None

8. Mr. Surathian Chakthranont

Director
Risk Management Committee member

Age : 67 years

Date of Appointment as a Director

- 25 April 2016

Educational Qualification

- Bachelor of Engineering (Environment), Chulalongkorn University
- Honorary Doctorate (Technology), Shinawatra University

Training

- Director, Accreditation Program (DAP 27/2004), Thai Institute of Director (IOD)

Current Position

Other Listed Company

- None

Other Company/Organization

- Director in 3 Other Organizations

Shareholding as of 31 December 2019

- Own : None
- Spouse : None
- Minor children : None
- Legal entity hold shares at an amount exceeding 30% : None

Family relationship among Directors and Management : None

MANAGEMENT AND CORPORATE SECRETARY



1

1. Mr. Wisate Chungwatana

Chief Executive Officer

Age : 52 years

Educational Qualification

- Master of Science (Mechanical Engineering), Missouri University of Science and Technology, Rolla, MO, U.S.A
- Bachelor of Engineering (Mechanical Engineering), Chulalongkorn University

Training

- Top Executive Program (Class 28/2019), Capital Market Academy (CMA)
- Director Certification Program (DCP 189/2014), Thai Institute of Directors (IOD)
- Petroleum Development and Operations, Stavanger, Norway
- Management of Electric Power Utilities, Stockholm, Sweden

Shareholding as of 31 December 2019

- Own : 100,000 shares (0.003 %)
- Spouse : None
- Minor children : None
- Legal entity hold shares at an amount exceeding 30% : None

Family relationship among Directors and Management None



2

2. Dr. Nippon Bundechanan

Deputy Chief Executive Officer

Age : 48 years

Educational Qualification

- Doctor of Philosophy Industrial Business Administration, King Mongkut's Institute of Technology Ladkrabang
- Master of Mechanical Engineering, Drexel University, Philadelphia, PA, U.S.A.
- Master of Engineering Management, Drexel University, Philadelphia, PA, U.S.A.
- Bachelor of Mechanical Engineering (Honor), King Mongkut's Institute of Technology Ladkrabang

Training

- Thai Intelligent Investors Program (TIIP 2/2013), Stock Exchange of Thailand
- Successful Formulation & Execution of Strategy (SFE 13/2011), Thai Institute of Directors Association
- Role of the Compensation Committee (RCC 11/2010), Thai Institute of Directors Association
- Financial Statements for Directors (FSD 09/2010), Thai Institute of Directors Association
- Director Certification Program (DCP 120/2009), Thai Institute of Directors Association
- Doctoral Research for Manufacturing Industry Workshop, University of Cambridge (Institute for Manufacturing - IfM)
- Leadership Development Program, University of California Berkeley (Berkley Executive Coaching Institute)
- Strategy and Innovation for Businesses in Asia, Massachusetts Institutes of Technology (Sloan School of Management)/Mahidol University
- Integrated Water Management for High Level Managers, Thai Waterwork Association

Shareholding as of 31 December 2019

- Own : None
- Spouse : None
- Minor children : None
- Legal entity hold shares at an amount exceeding 30% : None

Family relationship among Directors and Management None

Note : Appointed as Deputy Chief Executive Officer on 19 December 2019 and will take on the role of Chief Executive Officer on 1 March 2020 as the resolution of the Board of Directors Meeting No. 11/2019.

3. Mr. Natthapatt Tanboon-ek

Chief Finance Officer

Age : 44 years

Educational Qualification

- Master of Business Administration (Finance), University of Baltimore, MD, U.S.A.
- Bachelor of Engineering (Electrical), Chulalongkorn University

Training

- New Revenue Recognition Criteria according to TFRS 15 for General Business Program (Class 4/2019), Federation of Accounting Professions (TFAC)
- Summary of changes and significant issues of TFRS (revised version) Program (Class 2/2019), Federation of Accounting Professions (TFAC)
- Executive Development Program (EDP) class 11, Thai Listed Company Association
- Financial Advisor License, Securities Exchange Commission
- Credit Derivative and CDO Master Class Training Course
- Beta Alpha Gamma (awards granting to top 10% of MBA students of accredited universities in U.S.A.)
- Finance for Financial Manager, GDF SUEZ University
- Company Secretary Program (CSP 33/2009), Thai Institute of Directors

Shareholding as of 31 December 2019

- Own : None
- Spouse : None
- Minor children : None
- Legal entity hold shares at an amount exceeding 30% : None

Family relationship among Directors and Management None



4

4. Mr. Khamhoung Ratsamany

Vice President of Business Operation

Age : 53 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 as of 31 December 2019

- Own : None
- Spouse : None
- Minor children : None
- Legal entity hold shares at an amount exceeding 30% : None

Family relationship among Directors and Management None

5. Mr. Sakvithu Saedan

Director of Business Operation

Age : 51 years

Educational Qualification

- Bachelor of Science (public health) major in sanitation science, Mahidol University

Training

- Wastewater Treatment Plant Controller, Department of Industrial Work
- Solid Waste Treatment Plant Controller, Department of Industrial Work Certificates
- Environmental Manager, Department of Industrial Work Certificates
- The Boss (Class 80/2013), Management and Psychology Institute (MPI)
- Safety Department Manager, Department of Welfare and Labor Protection
- Occupational Health, Safety and Working Environmental Committee, of Welfare and Labor Protection
- Confined Space Work Approver, Supervisor, Rescuer and Operator, of Welfare and Labor Protection
- Fire Fighting Commander
- Advance Fighting

Shareholding as of 31 December 2019

- Own : None
- Spouse : None
- Minor children : None
- Legal entity hold shares at an amount exceeding 30% : None

Family relationship among Directors and Management None



5

6. Mr. Varanon Laosuwan

Director of Utilities Project Development

Age : 39 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, CONG Thammasat Business School

Shareholding as of 31 December 2019

- Own : None
- Spouse : None
- Minor children : None
- Legal entity hold shares at an amount exceeding 30% : None

Family relationship among Directors and Management None



6



7

7. Mr. Punrapee Noparumpa

Director of Power Project Development

Age : 38 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

- The Young Executive program 2017, Thailand Energy Academy
- Understanding the Petrochemical Industry & the lurking issues 2010, Petroleum Institute 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
- Natural Gas & Business in its Value Chain 2008, Petroleum Institute of Thailand
- Understanding the Oil Business 2008, Petroleum Institute of Thailand

Shareholding as of 31 December 2019

- Own : None
- Spouse : None
- Minor children : None
- Legal entity hold shares at an amount exceeding 30% : None

Family relationship among Directors and Management None

8. Mrs. Rattana Shinawatra

Director of Accounting

Age : 57 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, CONG Thammasat Business School

Shareholding as of 31 December 2019

- Own : None
- Spouse : None
- Minor children : None
- Legal entity hold shares at an amount exceeding 30% : None

Family relationship among Directors and Management None



8

9. Ms. Nutchra Rattanaajitbanjong

Corporate Secretary

Age : 35 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

- 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 (CSP 17/2008), Thai Listed Companies Association and The Securities Exchange of Thailand

Shareholding as of 31 December 2019

- Own : None
- Spouse : None
- Minor children : None
- Legal entity hold shares at an amount exceeding 30% : None

Family relationship among Directors and Management None

WE INVEST IN
**UTILITIES
BUSINESS**



OVERVIEW OF BUSINESS



OVERVIEW OF BUSINESS

WHA Utilities and Power Public Company Limited (the Company or WHAUP) was established on June 30, 2008. As of 31 December 2019, WHA Industrial Development Public Company Limited (“WHAID”) holds a majority stake of 68.86 percent. 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 and providing wastewater treatment services to operators in industrial estates and industrial lands; and (ii) power business through investment in power generation business, both domestically and abroad.

In addition to the exclusivity rights granted by the 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, 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, Cambodia, Laos, Myanmar and Vietnam (the CLMV 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 and WHA Water Company Limited (a subsidiary in which the Company has a stake of 99.99 percent.) are one of the major utilities service providers to companies in Thailand

industrial estates. The Company’s aggregate maximum industrial water production capacity in all industrial estates and industrial lands is 294,576 cubic meters per day, with an aggregate maximum wastewater treatment capacity in all industrial estates of 120,456 cubic meters per day.

In 2019, the Company’s and its subsidiaries’ aggregate average distribution quantity of raw water and industrial water in all industrial estates and industrial lands was 71.6 million cubic meters representing 199,084 cubic meters per day that the said quantity included the distribution quantity of demineralized water, which has been distributed since October 2019 and an aggregate average wastewater treatment in all industrial estates and industrial lands was 35.4 million cubic meters per year representing 98,381 cubic meters per day. In addition, the Company also plan to invest utilities business in international. In 2019, the Company’s and its subsidiaries’ aggregate average distribution quantity of other utilities service and invest for utilities business in international was 3.2 million cubic meters per year representing 12,269 cubic meters per day. The Company and its subsidiaries also plan to provide other public utilities to industrial operators both inside and outside industrial estates in the future. The Company has been awarded ISO 9001:2008 for quality standards and ISO 14001:2004 for environmental standards.

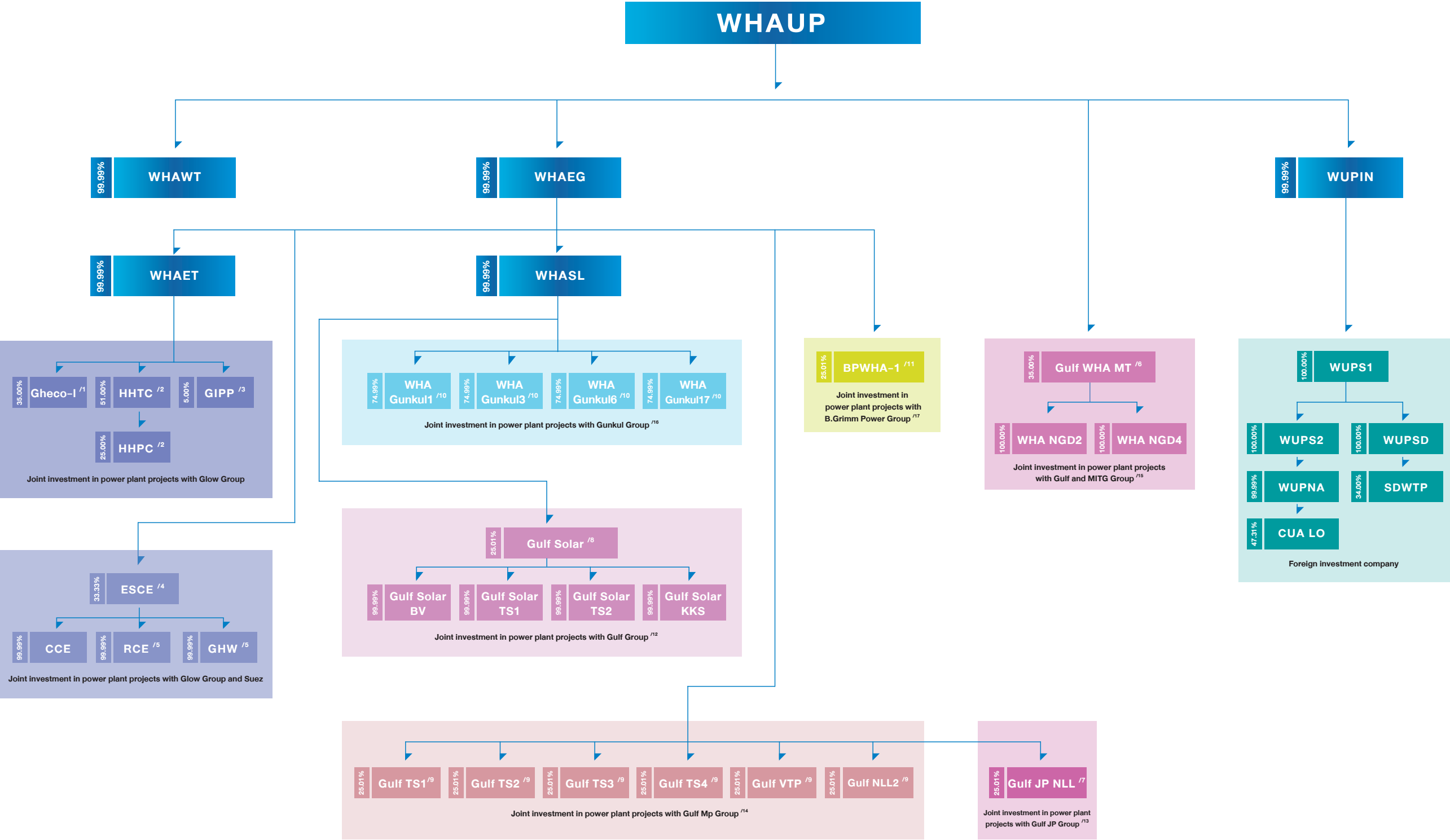
In relation to the power business, WHA Energy Company Limited, a subsidiary in which the Company has a stake of 99.99 percent has jointly invested with leading power operators in conventional and Renewable Energy generation businesses, both domestically and abroad. As at 31 December 2019, the Company’s aggregate power generating capacity in proportion to its equity in the commercially operating power plants was 559 MW and in the power plants under construction was at 24.4 MW. In addition, there is a natural gas distribution business, a joint venture between WHA Energy Company Limited and partnership by holding 35 percent as follows the WHA Eastern Seaboard NGD 2 Project at WHA ESIE 2 achieved the commercial operation date on December 2018 and the WHA Eastern Seaboard NGD 4 Project at WHA ESIE 4 achieved the commercial operation date on June 2019.



UNIT II
PUPA

BUSINESS STRUCTURE

The Company's investment structure as at 31 December 2019 is set out in the following diagram:



KEY CHANGES AND DEVELOPMENTS

Note :

- 1/ About 65 percent of total issued and paid-up shares in Gheco-I are held by the Glow Group.
- 2/ HHTC is a holding company, in which 49 percent of total issued and paid-up shares are held by the Glow Group, which also Holds 55 percent of total issued and paid-up shares in HHPC.
- 3/ About 95 percent of total issued and paid-up shares in GIPP are held by the Glow Group.
- 4/ About 66.67 percent of total issued and paid-up shares in ESCE are held by the Glow Group and Suez (South East Asia) Limited.
- 5/ RCE and GHW registered the dissolution of the company on 19 November 2019. At present, on process of liquidation for registration of the completeness of liquidation
- 6/ About 35 and 30 percent of total issued and paid-up shares in Gulf WHA MT are held by the Glow Group and MITG Group respectively.
- 7/ About 74.99 percent of total issued and paid-up shares in Gulf JP NLL are held by the Gulf JP Group.
- 8/ About 74.99 percent of total issued and paid-up shares in Gulf Solar are held by the Gulf Group.
- 9/ 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 Group.
- 10/ About 74.99 percent of total issued and paid-up shares in each of WHA Gunkul 1, 3, 6 and 17 are held by Gunkul Group.
- 11/ About 74.99 percent of total issued and paid-up shares in BPWHA-1 are held by the B.Grimm Power Group.
- 12/ Gulf Group means Gulf Energy Development Company Limited, its subsidiaries and related companies.
- 13/ Gulf JP Group means Gulf Company Limited, which is a joint venture company between Gulf Energy Development Public Company Limited and J Power Company Limited.
- 14/ Gulf MP Group means Gulf MP Company Limited which is a joint venture company between Gulf Energy Development Public Company Limited and Mitsui Group.
- 15/ MITG Group means MITG (Thailand) Company Limited which is a joint venture company between Mitsui Company Limited and Tokyo Gas Company Limited.
- 16/ Gunkul Group means Gunkul Engineering Public Company Limited, its subsidiaries and related companies.
- 17/ B.Grimm Group means B.Grimm power Public Company Limited, its subsidiaries and related companies.

JUNE

- 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").

JULY

- 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 THB 100 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.

MARCH

- 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.

NOVEMBER

- 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.

2008

2011

2012

2013

MARCH

- 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.

APRIL

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

MAY

- 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.

JANUARY

- 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.

2015

AUGUST

- 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.

2014

JUNE

- 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")

JULY

- 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.

AUGUST

- WHAEG acquired a stake of 33.33 percent. in Eastern Seaboard Clean Energy Company Limited ("ESCE") . ESCE will hold all the shares of Chonburi Clean Energy Company Limited ("CCE") and Rayong Clean Energy Company Limited ("RCE"), in order to participate in a special bid to sell electricity generated from industrial waste.

SEPTEMBER

- Glow Hemaraj Wind Company Limited ("GHW") restructured its shareholding and results in ESCE holding 100 percent of GHW shares.

2016

2016

MARCH

- 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.

MAY

- 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.





MAY

- 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, WUPNA in Vietnam.

JUNE

- 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.

AUGUST

- 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

2018

JANUARY

- The Gas-fired Small Power Producer by Gulf TS4 Power Plant, a joint venture between WHAEG and Gulf MP at shareholding 25.01 percent and 74.99 percent respectively. Gulf TS4 Power Plant has an installed power capacity of 130 MW, located in WHA ESIE 1 which achieved the Commercial Operation Date (COD) on January 2018.
- On January 2018, the Company entered in to the Shareholder Agreement with Gulf Energy Development Public Company Limited and MITG (Thailand) Company Limited at shareholding 35 percent, 35 percent and 30 percent respectively, in order to conduct the distribution of natural gas to customer in the WHA ESIE 2 and WHA ESIE 4.
- 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.

2018

NOVEMBER

- 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.

DECEMBER

- WHA Eastern Seaboard NGD 2, a joint venture company between Gulf Energy Development Public Company Limited and MITG (Thailand) Limited. In order to conduct the distribution and retail trade of natural gas to Industrial customers in WHA EISE 2 achieved the Commercial Operation Date (COD) on December 2018.
- WHASL Signed Private PPA is total amount of 11.26 MW which achieved the Commercial Operation Date (COD) on May - December 2018 of 2.64 MW.

JANUARY

- 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.

APRIL

- 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.

OCTOBER

- 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.

DECEMBER

- WHAUP enter into the 30 years land lease agreement with PTTPLC to invest and operate the wastewater treatment plant in EECi (Wangchan Valley) with initial capacity 400,000 cubic meters per years.
- During the year 2019, WHASL signed a Private PPA to invest in the installation and sale of electricity from solar energy in the total amount of 21.40 megawatts. There were projects starting the commercial operation date during the year 2019 in a total amount of 4.2 megawatts.

2019

2019

2019

JUNE

- WHA Project Eastern Seaboard NGD 4 Project is a joint venture between Gulf Energy Development (Public) Company Limited and MITG (Thailand) Company Limited for operating the business of natural gas distribution through pipelines to industrial customers in the WHA ESIE 4. Its commercial operation date was in June 2019.

AUGUST

- 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.

UTILITY BUSINESS

NATURE OF PRODUCTS AND SERVICES

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 three 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:** 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) **Demineralized Water:** Demineralized water is the highly pure water used in some industry such as Power plant, Petrochemical, Electronics etc. WHAUP has started to sell the Demineralized water in 2019.

3. WASTEWATER TREATMENT

The WHAUP Group provides central wastewater treatment ponds management services of industrial estates. Industrial plant release 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. wastewater treatment ponds management services.



PRODUCTS AND SERVICES

INDUSTRIAL WATER PRODUCTION PLANTS AND WASTEWATER TREATMENT FACILITIES

Currently, the Company and its subsidiaries have 17 industrial water production plants and 13 wastewater treatment facilities located in ten industrial estates and industrial lands operated by the WHAID Group. The aggregate maximum industrial water production capacity is 294,576 cubic meters per day and the aggregate maximum wastewater treatment capacity is 120,456 cubic meters per day.

THIS SUMMARY OF INDUSTRIAL WATER PRODUCTION 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	104,400 ^{2/}	60,000
Eastern Seaboard Industrial Estate (Rayong) ("ESIE")	Pluakdaeng, Rayong	48,000 ^{3/}	- ^{4/}
WHA Eastern Seaboard Industrial Estate 1 ("WHA ESIE 1")	Pluakdaeng, Rayong	54,000	10,000
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 4 ("WHA ESIE 4")	Pluakdaeng, Rayong	3,600	1,500
WHA Eastern Seaboard Industrial Estate 3 ("WHA ESIE 3")	Banbung/NongYai, Rayong	3,600	1,500
Total		294,576	120,456

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 clarified water production plants in WHA EIE and Demineralized water plant are owned by WHA Water Company Limited ("WHAWT"), a subsidiary of the Company. Those plants have tax exemption privileges granted by the BOI.

^{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.

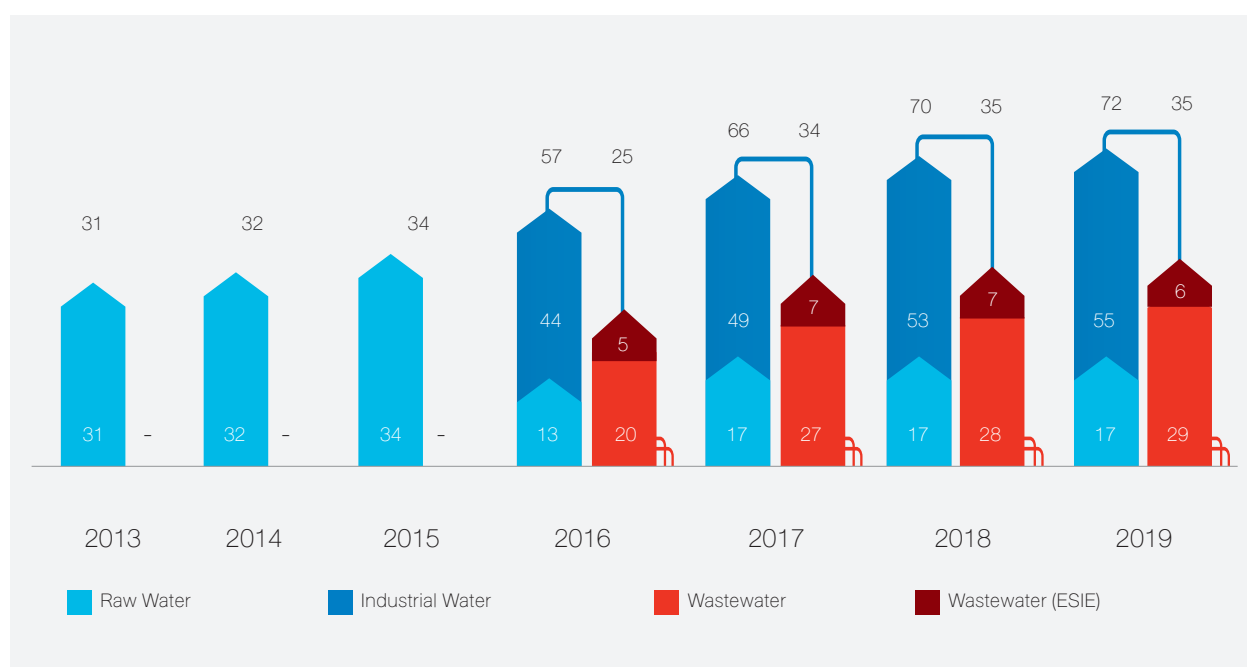
^{4/} The Company has not leased the right to conduct wastewater treatment in ESIE (Rayong). However, the Company provides wastewater management services in ESIE (Rayong) having wastewater treatment capacity of 32,000 cubic meters per day.

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; therefore, there has been no amendment to 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 having 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 receives service fee on a cost-plus basis for the services provided to the two aforementioned areas.

TOTAL SALES AND MANAGEMENT VOLUME

(million cubic metres/year)



In 2019, the industrial water production quantity in which the Company takes a lease right from WHAID Group was 55.0million cubic meters, an increase 5% from 2018.

The wastewater treatment quantity in all industrial estates in which the Company takes the right to operate from WHAID Group was 35.4 million cubic meters, an increase 1% from 2018.

The raw water procurement and distribution quantity in areas of WHAID Group was 16.5 million cubic meters, a decrease 2% from 2018

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.

MARKETING STRATEGIES

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

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.

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. 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.

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.

EXPANSION TO CLMV, PARTICULARLY IN VIETNAM AS THE HIGHEST POTENTIAL MARKET

The company plans to expand its utilities business to regional countries, especially to the countries with high utilities consumption, so it targets on CLMV countries 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 operate 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 were the potential company to seek for investment opportunities in the water business.

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 consumption, such as water utilization for consumption and tourism, and (2) industrial consumption, such as industrial factories. However, according to the master plan on water resources management prepared by the Water Resources Policy and Management Committee, Department of Water Resources, it was reported that, regarding water utilization for consumption and tourism in 2015, there was the demand of water for consumption of 4,783 million cubic meters. In 2037, the water demand is expected to be 5,991 million cubic meters. Regarding the water utilization for industry in 2015, the demand of the industrial sector was 1,913 million cubic meters. It is estimated that the water demand in 2037 will be 3,488 million cubic meters in the main area where

factories and industrial groups are located, namely Bangkok and nearby provinces, including areas in the eastern region which are the main industrial areas of the country. In other regions, the majority of industries are ongoing industries from the agriculture and production sectors for the local consumption.

Source : 20-Year Master Plan on Water Resources Management (2018-2037)

INDUSTRY CONDITION FOR WATER CONSUMPTION IN THE INDUSTRIAL SECTOR

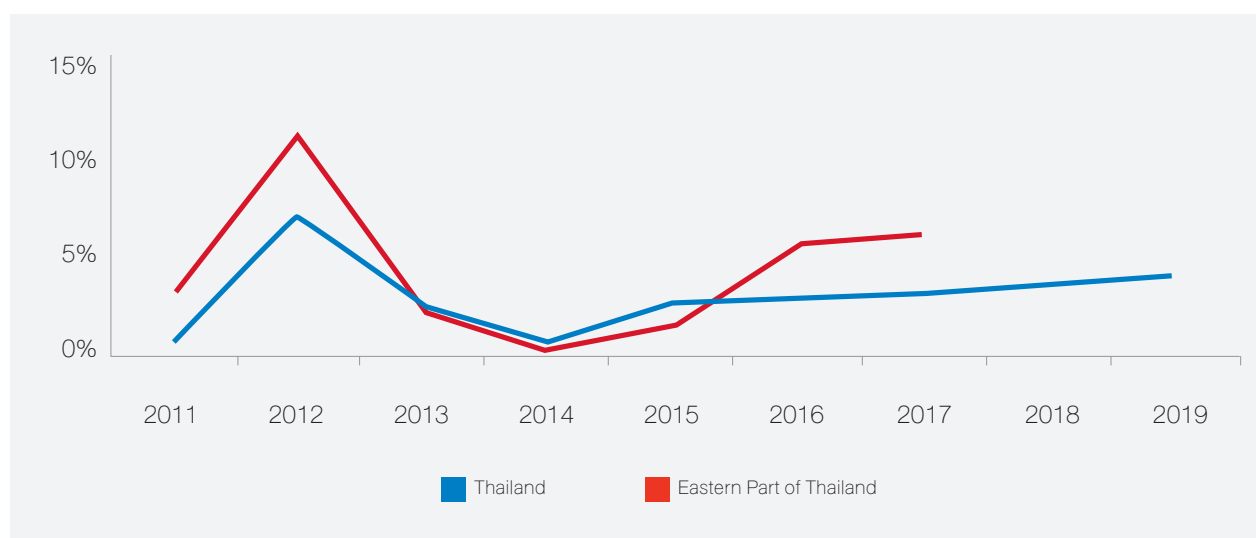
The industrial sector in Thailand has a growth trend as a result of economic recovery both locally and internationally. The sign of Thailand's economic recovery can be seen in the improvement of the gross domestic product (GDP) during the past. This was due to the improvement of political situation in Thailand, the recovered of world's economic, and especially the economy of the United States, a key trading partner of Thailand, resulting in the improvements in Thailand's export sector. In addition, the Government has announced a policy to develop the Eastern Economic Corridor (EEC) to promote investment in the eastern seaboard area, income from which accounted for 20.0 percent. of GDP, and to improve logistics system in the

same area, in particular on Laem Chabang Port. The aim is to develop Laem Chabang Port, Mapthaphud port and Utapao international Airport into a hub of transportation to connect with other ASEAN countries such as Dawei deep sea port in Myanmar, Sihanoukville Autonomous Port in Cambodia and Port of Vung Tau in Vietnam.

According to the Bank of Thailand's forecast, Thailand's GDP is expected to grow by approximately 1.5-2.0 percent. in 2020. (Based on data as of February 2020)

During the past five 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. In the past five years (2013-2017), this region had an average economic growth rate of 3.4 percent. per annum, compared to the country's average growth rate of 2.5 percent per annum during the same period. In 2018, The government has expedite to be the investment and operation in the EEC area to be concrete which seen from the project that has been approved and private has participated in the investment in the past. The investors to have confidence in Thailand and especially the EEC area.

GDP GROWTH OVERALL AND IN THE EASTERN PART OF THAILAND

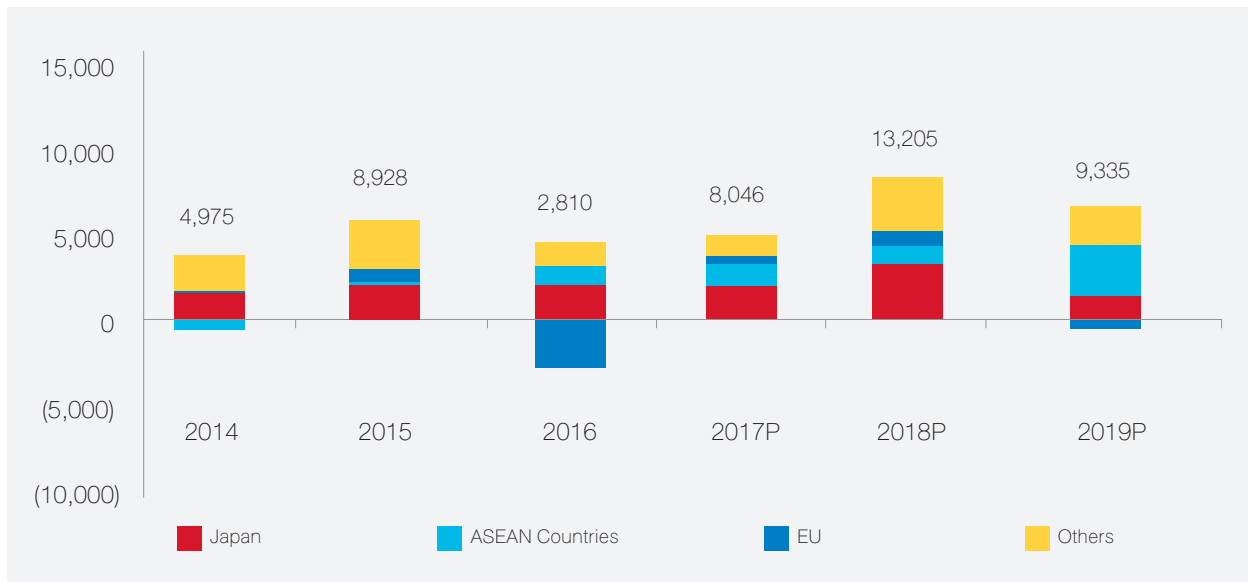


Source : Bank of Thailand and office of the National Economic and Social Development Council.

Regarding the statistics of application for investment promotion of foreign countries in 2019, there are 991 projects applying for investment promotion. The value of investment is 506,230 million Baht. Compared to the year 2018, the number of projects increased by 2% and the value decreased by 7%

Foreign direct investment (FDI)

(Unit : USD million)



Source : The Bank of Thailand

Note : The 2019P figure is the projected number during January to November

In 2019, the aggregate value of investment projects based on the applications submitted to the BOI was THB 756.1 billion, decreasing by 16.2 percent. from 2018.

Applications for BOI investment promotional privileges mainly came from industrial operators in Rayong and Chonburi provinces, which accounted for 27.8 percent. of total submitted applications and 54.9 percent. of the aggregate value of investment projects in 2019. That was due to Rayong and Chonburi are the strongholds of petrochemical and automotive businesses, which are the major in Thailand industries.

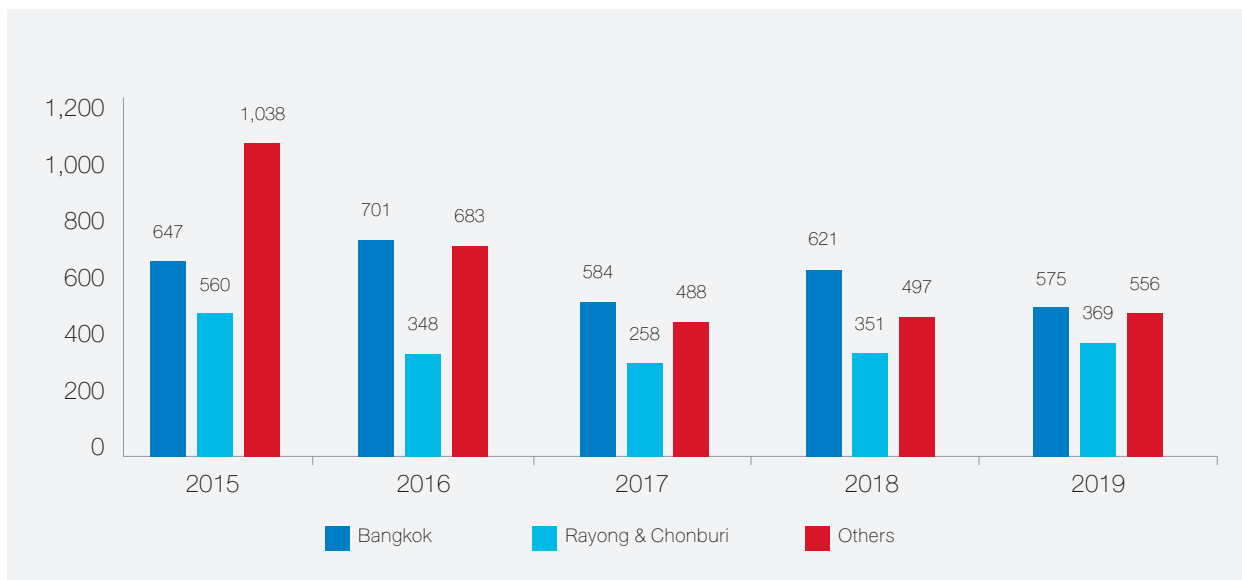
BOI-APPROVED INVESTMENT PROJECTS

BOI-approved applications	2015	2016	2017	2018	2019
Number of projects	2,245	1,732	1,330	1,469	1,500
Project value of submitted applications (THB billion)	810.4	867.5	631.1	549.5	447.4

Source : Office of BOI

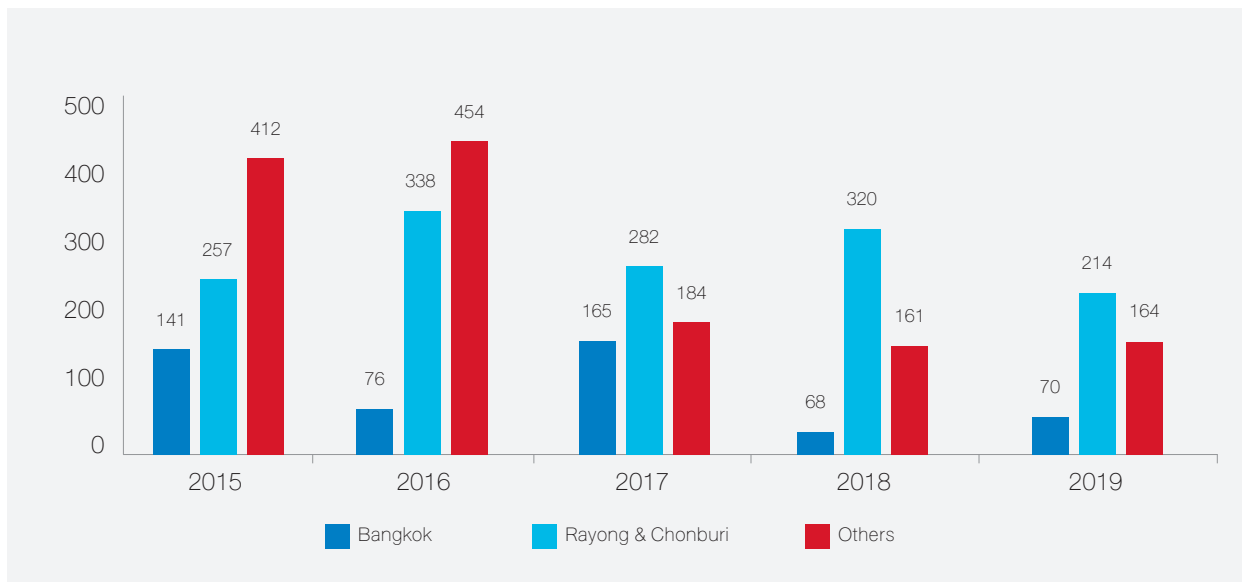
SITES OF BOI-APPROVED INVESTMENT PROJECTS

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

POWER BUSINESS

NATURE OF PRODUCTS OR SERVICES

The WHAUP Group conducts power business by holding equity in other power generating and distribution companies, both domestically and abroad. The 30 commercially operating power plants in which the WHAUP Group invested have an aggregate installed power generating capacity of 2,588 MW, or equal to a capacity in proportion to equity of 599 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. In addition, the power plant projects under construction in which the WHAUP Group has investment, these power plants have an aggregate contracted power generating capacity of 24.4 MW, or equal to a capacity in proportion to equity of 24.4 MW.

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 Glow 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 PL1	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 17	WHA Mega Logistics Centre, Bangna-Trad KM.18	Solar power	VSPP	74.99%	Power	1.00	MW	0.73	MW	July 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

Power plant	Location	Type of power	Category of Plant	Equity holding (percent.)	Installed power generating capacity			Capacity in proportion to equity		Commercial Operation Date
WHA Gunkul Green Solar Roof 1	WHA Mega Logistics Centre, Bangna-Trad KM.18	Solar power	VSP	74.99%	Power	0.64	MW	0.48	MW	April 2014

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
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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	
CCE	WHA CIE	Waste-to-Energy	VSP	33.33%	Power	8.6	MW	2.9	MW	November 2019
Solar power plants	-	Solar Power	Private PPA	100%	Power	6.4	MW	6.4	MW	May 2018 - December 2019
Total					Power	2,588	MW	559	MW	
					Steam	148	TPH	38	TPH	
					Chilled water	4,600	RT	1,150	RT	

2) Information about the power plants under construction in which the WHAUP Group has investment

Solar power plants	-	Solar Power	Private PPA	100%	Power	24.4	MW	24.4	MW	Quarterly 1 2020 - Quarter 3 2020
Total					Power	24.4	MW	24.4	MW	

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 Glow 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 Glow 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 Glow 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 Glow 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 Energy 2 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 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;

2. 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;
3. 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;
4. 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.

WHA Energy 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 per cent., 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 NLL 2 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 Energy Public Company Limited and Suez (Asia) 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 SUEZ Co.,Ltd 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) Co., Ltd.

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.

11. Solar Rooftop Power Plant Project

The Company has operated Solar Rooftop plant project to distribute power to industrial factories and warehouses located both in industrial areas and warehouses of the WHA Group and external areas, which has started commercial power generation in a total volume of 6.4 MW.

POWER PLANTS UNDER CONSTRUCTION IN WHICH THE COMPANY HAS INVESTMENT

Solar Rooftop power plants

The Company develops solar rooftop 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 24.4 MW.

BUSINESS STRATEGIES

DELIVER CHEAPER ENERGY TO INDUSTRIAL CUSTOMERS

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 price than competitors which helps reduce production costs for customers.

DEVELOPMENT CAPTIVE ENERGY SOURCES FOR INDUSTRIAL AREAS

The company is currently studying the feasibility of developing a Captive Energy, especially the Gas-fired Cogeneration Power Plant to distribute electricity and steam within industrial areas by starting from the industrial estate areas of the WHA Group. This will help the Company to distribute electricity to industrial customers in various industrial areas more stable because it can manage the production of electricity from various types of production units to be effective and in line with character of users in that area, which has low steam production costs and reduces energy loss from electricity distribution through the transmission system over long distances.

STUDY AND DEVELOPMENT OF SMART ENERGY AND SMART MICROGRID INNOVATIONS IN INDUSTRIAL ESTATES OF WHA GROUP

The Company is in the process of studying and developing various energy innovations, such as the new electricity market structure, i.e., Peer-to-Peer Energy Trading, the new service charge rate structure, i.e., Net Metering, Net Billing, new technologies, i.e., energy storage systems, the management and operation of new electricity systems, i.e., Microgrid systems, etc., in the industrial estate areas of the WHA Group. Its goal is to support the changing trends of the energy industry to the decentralized power generation and power generation from clean energy. This will help reduce costs and enhance energy stability for entrepreneurs in

industrial estates and also increase investment opportunities for the Company.

FOCUS ON DOMESTIC AND VIETNAM MARKET AS HIGHEST POTENTIAL MARKET IN POWER OPPORTUNITIES

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. The CLMV countries (i.e. Cambodia, Laos, Myanmar and Vietnam), particularly Vietnam, are viewed as potential countries and attractive for investment. The Company currently is in process of studying the investment on Solar Farm which has the power purchase agreement for the long-term Vietnam Electricity (EVN)

INDUSTRY OVERVIEW

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 fact 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).

RISK FACTORS

The Company aims to become Thailand's leading provider of public utilities and power services. The Company recognizes that the various risk factors arising from changes of internal and external factors, including the environment, may affect its operations. Therefore, the Company has conducted an assessment on material risks, and also the impacts of risks on its operations. The Company's assessment was divided into four kinds of major risks, namely strategy risk, operational risk, financial risk and compliance risk, which was analyzed in connection with its two core businesses, i.e. water business and power business.

STRATEGY RISK

WATER BUSINESS

REVENUE OF THE WATER BUSINESS MAINLY DERIVES FROM CUSTOMERS IN THE WHA INDUSTRIAL DEVELOPMENT PUBLIC COMPANY LIMITED GROUP'S INDUSTRIAL ESTATES AND INDUSTRIAL LANDS

Currently, the Company's core revenue is derived from its water business in industrial estates and industrial lands developed and managed by WHA Industrial Development Public Company Limited ("WHAID") which is the Company's

major shareholder and its subsidiaries (collectively called the WHAID Group). This source of revenue accounts for 42.9 percent and 44.7 percent of the Company's total revenue for 2018 and 2019, respectively.

The Company and the WHAID Group have entered into the Strategic Partnership Agreement and Right Lease Agreement which entitles the Company to operate its water business in the WHAID Group's industrial estates



and industrial lands for the Current Projects and Future Projects. However, if the WHAID Group decides in the future to suspend the expansion of its business relating to development of industrial estates and industrial lands for any reason and the Company does not have any other customers outside the WHAID Group's industrial estates and industrial lands, the Company's income may significantly decrease. On the other hand, if the right lease agreement expires at the end of the 50-year term without renewal and the Company does not have customers apart from those in the WHAID Group's industrial estates and industrial lands to replace this revenue, the Company's results of operations and financial condition may materially be affected. The Company realizes the risk and consequences from that Factor. In order to pull down the risk, the company select the project with the reasonable of Equity Internal Rate of Return and study on the pros and cons of feasibility of the project and sensitivity analysis. If it is a joint venture, the company has a carefully selected investor by knowledge, ability, experience, expertise, financial, and history of past performance of the investor.

RISK RELATING TO CUSTOMER CONCENTRATION

The Company's core customers in the water business mainly consist of operators in petrochemical business, power generation business and automobile business in industrial estates and industrial lands, accounting for 37 percent, 26 percent and 11 percent, respectively, of the Company's total revenue from the water business for 2019. In addition, the 10 largest customers of the Company mainly consist of operators in the petrochemical business and power generation business, accounting for 66.4 percent and 62.0 percent of the Company's total revenue for 2018 and 2019, respectively. A decline or slowdown in the business expansion or investment conditions of these industrial sectors and large customers may reduce their demand for water services and other public utilities which may materially affect the results of operations of the Company.

The Company realizes the risk and consequences from that Factor. In order to pull down the risk 1) the Company monitors customer's water usage closely 2) Queries and revise water usage plan for those customers consistently and 3) to sustainably reduce the possible consequences, the Company set policies and operating plans to offer more variety of products to better serve customer demand such as specific industrial water or reverse osmosis (RO) to focus on more groups of customers as well as plan

for customers outside the industrial estates such as sub-district administrative organization, etc. in the important economic area.

RISK RELATING TO RELIANCE ON THE MAJOR SUPPLIERS FOR RAW WATER PROCUREMENT

The Company operates its utility service business by producing and distributing industrial water to operators in industrial estates and industrial lands in which the raw water is the key raw material for its operation. The cost of raw water represented approximately 65 percent of the total cost of the Company. Currently, the Company mainly procures raw water from three (3) major suppliers, i.e. (1) Eastern Water Resources Development and Management Public Company Limited (East Water) which is a large concessionaire granted by the Royal Irrigation Department (RID) having service area in Chonburi, Rayong and Chachoengsao provinces, (2) RID and (3) the WHAID Group (from WHAID Group's internal reservoir of natural water) and their supply volume accounts for 84 percent, 11 percent and 5 percent, respectively. Further, the WHAID Group acted as an intermediary for East Water and RID in the Company's water procurement process. However, the Company is able to directly procure raw water from East Water and RID.

If East Water, RID or the WHAID Group is unable to supply raw water to the Company in the quantity required and at the agreed time, due to raw water supply shortage or significantly increases in the selling price of raw water, this may have a material adverse effect on the Company's financial condition, results of operations and prospects.

In the past decade, the Company has planned to reduce risks of having few major suppliers of raw water and/or distributors of raw water by 1) the Company keeps updates on natural raw water resources and plan to build water reservoirs in some industrial estates as appropriate 2) plans to explore natural raw water resources in addition to the resources currently use 3) plans for recycled water system 4) the Company also follows up and coordinates with customers constantly to promptly plan for sufficient water usage and distribution as well as coordinates with raw water distributors and find protection and modification solutions constantly. With those mention preventive measures that have been performed, the Company is confidence that there is sufficient and quality raw water resources for water supply business

POWER BUSINESS

INVESTMENT RISK RELATING TO THE COMPANY'S INVESTMENTS IN BUSINESSES OVER WHICH THE COMPANY HAS NO CONTROL

Currently, the Company has made investments in the power business by holding equity in various energy companies. Revenue from the power business of the Company is derived from investments in companies engaging in power business, which are considered associates of the Company, and accordingly the Company does not have power to control those entities, and the management of their businesses depends on the discretion of their respective boards of directors. Moreover, although the major shareholders of these companies have expertise in the power business, the Company is subject to the risk of investment in the power business. The Company received revenue from the investments of such power business in forms of share of profit from investments in associates and joint ventures, and dividends. The Company manages such risk by selecting joint venture partners who have high expertise and experience when investing in any associated companies. It is the sole investment in solar power plant projects.

OPERATIONAL RISK

WATER BUSINESS

RISK RELATING TO AN ABILITY OF THE COMPANY TO INCREASE PUBLIC UTILITIES PRICE IN THE INDUSTRIAL ESTATES

Section 14 of the Industrial Estate Authority of Thailand Act, B.E.2522 (as amended) states that "the IEAT has the power to determine the selling price, rental fee and hire purchase fee of real property and movable property, the maintenance fee of public facilities and other fees in relation to public services provided in industrial estates, taking into account reasonableness in terms of business." Therefore, the power to announce and increase the price of public utilities such as industrial water price and management services price of central wastewater treatment ponds in industrial estates lies solely with the IEAT. The Company cannot charge for public utilities at a higher rate than the rates specified by IEAT. Therefore, there is a risk that the IEAT may not grant approval if the Company seeks to increase the price of public utilities to meet the changing costs or to reflect the market condition. It is also notable that no requirements have been imposed on the Company to seek prior approval of the change of public utility prices collected in the industrial lands.

RISK RELATING TO THE DETERIORATION AND DAMAGE OF THE WATER PRODUCTION AND DISTRIBUTION SYSTEM

The Company's industrial water production and distribution system and wastewater treatment system may deteriorate in a usage life or be damaged during the course of operations, and if the repair is not completed in a timely manner, this may directly obstruct the production and distribution process of industrial water or interrupt the wastewater treatment system. In addition to impacting the Company's profitability and cash flow, this may cause the Company fails to fulfill its obligations under the Right Lease Agreement with the WHAID Group and agreements with Company's customers and may therefore also materially affect the Company's results of operations.

To reduce the mentioned risk, the Company keeps checking on all systems constantly and arranges maintenance plans of water providing and distribution system for industrial purposes appropriately. The purpose of maintenance plan is to focus on maintenance of dilapidated or damaged parts and increase performances for effective usage of water providing and distribution system for industrial purposes. In case when it is needed to temporary halt water providing and distribution system for repair and maintenance, the Company will inform customers in industrial estates beforehand and arrange spare water resources until the main water providing & distribution system will be completely fixed. Apart from this, the Company also prepares property insurance with insurance companies to responsible any damage of any circumstance.

RISK RELATING TO SEVERE ACCIDENT, DROUGHT AND NATURAL CATASTROPHE

Natural catastrophes (such as drought, flood, storm, fire and earthquake, epidemic and severe accident) are beyond the Company's control. An occurrence of a drought, natural catastrophe or severe accident may affect the Company's results of operations and severely damage the Company's operating assets. The impact of those circumstances may affect the industrial and commercial operators in industrial estates and industrial lands where the Company is operating, which could also have an effect on the Company's revenue and results of operations.

The Company is aware of the possibility of such risk, which is why it puts attention on the selection of location and the proper security system. The road in every project is higher than the public road in front of the projects or the highest water level during the floods in the past 30 years in the locality. The Company has applied for all-risk insurance covering all kinds of damage caused by natural disaster and accidents for every project. However, the Company is confident that it has proper plans and preventive measures to deal with floods. Therefore, there is little chance that damage from floods in any projects would exceed the compensation limit.

During the risk of drought, other than measures of the public and private sectors through agencies being appointed to supervise water, such as Water War Room, where the company is a part of the team, the Company establishes several internal measures for responding to drought as follows;

1. Wastewater Reclamation for recycling waste water to use as industrial water
2. Alternative Raw Water Resources: The Company has considered the water sources from potential local or private agencies to supplement the water supply for providing services to industrial customers
3. Wastewater Reuse by using treated wastewater in any activities, such as watering plants, construction etc.

According to such measures and cooperation, the Company is able to significantly minimize the risk of drought possibly affecting customers.

POWER BUSINESS

The Company invests in power business in the form of holding equity in energy companies. share of profit and dividend received from the power business in 2019 accounted for 50.97 percent of the Company's total share of profit and dividend received for the year ended 31 December 2019 whereby the highest share of profit came from investment in Gheco-I Company Limited (the Company's associates 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 received.

Risks relating to investment in power business include the following:

RISK RELATING TO A SHORTAGE OF FUELS

In the operation of natural gas and coal-fired power plants, natural gas and coals particularly constitute the key costs of operating activities. If there is a shortage of these natural gas or coals or a supplier is unable to provide a required quantity of natural gas or coals to the power plant of the Company's associates, which in each case is an uncontrollable event of the power plants, then the relevant power plants are likely to breach its obligations under the power purchase agreement it has entered into with EGAT or under electric power transmission or a steam supply agreements with their industrial customers. Therefore, a shortage of fuels may have a material and adverse effect on the profit sharing, financial condition and operating results of the Company.

However, GHECO-ONE Co., Ltd., the largest equity investment has already signed the contract to purchase coal in advance to prevent the risk of partial shortage of fuel.

WATER BUSINESS AND POWER BUSINESS RISK RELATING TO UNCERTAINTY IN ECONOMIC, POLITICAL AND SOCIAL CONDITION AND LAWS WHICH MAY AFFECT THE COMPANY'S BUSINESS EXPANSION PLAN AND OPERATING RESULTS

As the Company engages in the water and power businesses, its prospects of business expansion and results of operations depend on the economic, political, social conditions and legal framework of the country where the Company's businesses are being conducted. Particularly, if there is a material adverse change in economic conditions resulting in liquidity risk, inflation, foreign exchange rate fluctuations and credit default 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 condition, results of operations and business expansion plan.

SLOWDOWN IN THE GLOBAL ECONOMY, CHANGES IN THE STATE POLICY AND OTHER MACROECONOMIC FACTORS

The global economic slowdown, the United Kingdom's resolution to exit the European Union (Brexit), the change in state policy, and political uncertainty may affect investment and expansion of production capacity of industrial operators which are customers of the Company. Political uncertainty in Thailand may undermine the investor sentiment and private sector's confidence in Thailand investment. Some business segments may decide to move, expand or establish their production bases in neighboring countries instead in order to reduce this risk. The depressed political condition and the high level of household debt may also restrict private sector consumption. Declines in domestic consumption, production and export also curb investment activities which could reduce our customers' planned expansion of production or suspend their investment decisions, which may have adverse effects on the Company's business.

Nevertheless, Thailand remains attractive to the foreign investors who want to invest in South East Asia due to the better labor quality and the acceptable wage rate in comparison to those in European countries, The United States and other Asian countries. Moreover, the infrastructures particularly the public utilities in Thailand are better than competitors as well as. Despite the natural disaster in 2011, the overall investment in Thailand continues to expand. Moreover, in 2014, the government announced a change of regulations regarding rights and benefits of investment promotion to be suitable for current and future situations. This is also in line with the development direction of the country according to the National Economic and Social Development Plan the agricultural, industrial and service development policy effective in 2015.

FINANCIAL RISK

The operating performance, financial status, economic environment in Thailand and other countries, access to financial and capital market in Thailand and other countries, and interest rates are risk factors to the company's financial management. The company has consistently improved its financial position by having an appropriate and sufficient source of funds with a reasonable cost of capital. As at 31 December 2019, the Company's debt to equity ratio was

0.95 times and interest-bearing debt to total equity was 0.81 times. The company has a strong balance sheet and a lower debt level, moderate level of cash on hands, no foreign currency debts and broader lending sources. These will provide the company more flexibility to grow the business expansion, yet to minimize the financial risks.

Core revenue generated from power business derives from share of profit from the investments in associates and joint ventures. The Company's associates which engage in the power business had sources of financing and loans for development of power plants and part of operating costs in a foreign currency. Fluctuations in the foreign exchange rate and interest rate, may adversely affect the Company's share of profit from investments, financial condition and results of operations.

However, Gheco-One had already signed the contract the foreign exchange rate swap and the interest swap to prevent such financial risk.

COMPLIANCE RISK

RISK OF USE AND INTERPRETATION OF THE LAW AND THE NOTIFICATIONS RELATED TO THE BUSINESS OF THE COMPANY

Announcement of the Revolutionary Party No. 58 stipulates that the waterworks business is considered to be a public utility business, which must be licensed or concessioned 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 concessioned 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 be concessioned 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 for the Company and its subsidiaries for industrial zones only. The

water is not produced and sold to the public. Therefore, it is not considered to obtain a concession according to the Announcement of the Revolutionary Party No. 58 and the Ministry Announcement.

However, if the law changes in the future or the interpretation of the Announcement of the Revolutionary Party No. 58 and the Ministry Notification has changed, The Company and its subsidiaries may have to apply for a license or concession, and if the Company and its subsidiaries do not receive a license or concession for any reason, such event could adversely affect the business operation, revenue and financial position, the Company's performance and business opportunities.

CHANGES TO THE IEAT'S LAWS, RULES AND REGULATIONS AND OTHER APPLICABLE LAWS WHICH ARE RELEVANT TO THE BUSINESS OPERATION OF THE COMPANY

The Company's industrial water business and power business are governed by the IEAT's laws, rules and regulations and other applicable laws which may be interpreted differently in the future.

The Company is unable to anticipate any guidelines on the regulator's exercise of power to supervise water business under the relevant laws. The Company to the risk that there is a material change in applicable laws, rules and regulations. In addition, the national policy on public utilities and power is subject to change based on the policy and administrative system announced by each government. A change in the national policy on public utilities and power as well as an issue of new rules and regulations, e.g. a policy on alternative energy, may adversely affect the Company's investment and business expansion, including its business operations, revenue, financial condition, results of operations and business prospects.

OTHER RISK FACTORS

THE RISK FROM THE COMPANY'S ABILITY TO PAY DIVIDENDS THAT IS NOT IN LINE 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 payments 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 can not 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 the dividends depends on the dividends received from the joint venture that the Company has invested in whereas the Company is not a major shareholder of such affiliates. Therefore, the Company does not have a full control in the management and the ability to determine the dividend payment. Therefore, the Company cannot guarantee that the dividends can be paid to shareholders according to the policy.

In addition, the Public Company Act stipulates that the Company dividend cannot 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 have 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.

PROFILE AND CONTACT

GENERAL INFORMATION

THE COMPANY

Name of the Issuing Company	WHA Utilities and Power Public Company Limited
Symbol	WHAUP
Head office	9/241-242 UM Tower, 24/F, Ramkhamhaeng Road, Suanluang sub-district, Suanluang district, Bangkok 10250, Thailand
Telephone	02-719-9559
Fax	02-717-2128
Website	www.wha-up.com
Nature of business	<p>(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</p> <p>(2) Power business through investment in power generation business, both domestically and abroad.</p>
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

SUBSIDIARIES (Information as at 31 December 2019)

Company Name	Abbreviation	Nature of Business	Registered in	Shareholder	Registered Capital (Million)	Paid-up Capital (Million)	Par Value (Per Share)	Percentage of shares held by the Company
Subsidiaries								
1. WHA Water Co., Ltd.	WHAWT	Water resources development and management	Thailand	WHAUP	THB 100.00	THB 100.00	THB 10.00	99.99
2. WHA Energy Co., Ltd.	WHAEG	Holding Company	Thailand	WHAUP	THB 9,178.00	THB 9,178.00	THB 10.00	99.99
3. WHAUP International Co., Ltd.	WUPIN	Holding Company	Thailand	WHAUP	THB 45.00	THB 45.00	THB 5.00	99.99
Subsidiaries under WHAEG								
4. WHA Energy 2 Co., Ltd.	WHAET	Holding Company	Thailand	WHAEG	THB 4,250.00	THB 4,250.00	THB 10.00	99.99
5. WHA Solar Co., Ltd.	WHASL	Investment and development of renewable energy business	Thailand	WHAEG	THB 200.00	THB 200.00	THB 10.00	99.99
Subsidiaries under WUPIN								
6. WHAUP (SG) 1 PTE. Limited	WUPS1	Holding Company	Singapore	WUPIN	USD 1.34	USD 1.34	USD 1.00	100.00
Subsidiaries under WUPS1								
7. WHAUP (SG) 2 PTE. Limited	WUPS2	Holding Company	Singapore	WUPS1	USD 1.33	USD 1.33	USD 1.00	100.00
8. WHAUP (SG) 2DR PTE. Limited	WUPSD	Holding Company	Singapore	WUPS1	USD 0.10	USD 0.10	USD 1.00	100.00
Subsidiaries under WUPS2								
9. WHAUP Nghe An Joint Stock Company	WUPNA	Providing industrial water and wastewater treatment services	Vietnam	WUPS2	VND 29,950.78	VND 29,950.78	VND 10,000.00	99.99

JOINT VENTURE COMPANIES (Information as at 31 December 2019)

Company Name	Abbreviation	Nature of Business	Registered in	Shareholder	Registered Capital (Million)	Paid-up Capital (Million)	Par Value (Per Share)	Percentage of shares held by the Company
Joint Venture Companies of WHAUP								
1. Gulf WHA MT Natural Gas Distribution Co., Ltd.	Gulf WHA MT	Transport, distributing natural gas fuels through pipelines	Thailand	WHAUP	THB 454.00	THB 454.00	THB 10.00	35.00
2. WHA Eastern Seaboard NGD 2 Co., Ltd.	WHA NGD2	Transport, distributing natural gas fuels through pipelines	Thailand	Gulf WHA MT	THB 216.00	THB 216.00	THB 10.00	99.99
3. WHA Eastern Seaboard NGD 4 Co., Ltd.	WHA NGD4	Transport, distributing natural gas fuels through pipelines	Thailand	Gulf WHA MT	THB 234.00	THB 234.00	THB 10.00	99.99
Joint Venture Companies of WHAEG								
4. Eastern Seaboard Clean Energy Co., Ltd.	ESCE	Electricity and Power Generation	Thailand	WHAEG	THB 1,039.00	THB 1,017.81	THB 10.00	33.33
5. Chonburi Clean Energy Co., Ltd.	CCE	Electricity and Power Generation	Thailand	ESCE	THB 989.00	THB 989.00	THB 10.00	99.99
6 Rayong Clean Energy Co., Ltd. ^{/1}	RCE	Electricity and Power Generation	Thailand	ESCE	THB 50.00	THB 12.50	THB 10.00	99.99
7. Glow Hemaraj Wind Co., Ltd. ^{/1}	GHW	Electricity and Power Generation	Thailand	ESCE	THB 50.00	THB 12.50	THB 10.00	99.99
8. B.Grimm Power (WHA) 1 Limited	BPWHA-1	Electricity and Power Generation	Thailand	WHAEG	THB 1,533.56	THB 1,533.56	THB 100.00	25.01
9. Gulf JP NLL Co., Ltd.	Gulf JP NLL	Electricity and Power Generation	Thailand	WHAEG	THB 1,384.00	THB 1,384.00	THB 10.00	25.01

Company Name	Abbreviation	Nature of Business	Registered in	Shareholder	Registered Capital (Million)	Paid-up Capital (Million)	Par Value (Per Share)	Percentage of shares held by the Company
Joint Venture Companies of WHAEG								
10. Gulf VTP Co., Ltd.	Gulf VTP	Electricity and Power Generation	Thailand	WHAEG	THB 1,610.00	THB 1,610.00	THB 10.00	25.01
11. Gulf TS1 Co., Ltd.	Gulf TS1	Electricity and Power Generation	Thailand	WHAEG	THB 1,685.00	THB 1,685.00	THB 10.00	25.01
12. Gulf TS2 Co., Ltd.	Gulf TS2	Electricity and Power Generation	Thailand	WHAEG	THB 1,690.00	THB 1,690.00	THB 10.00	25.01
13. Gulf TS3 Co., Ltd.	Gulf TS3	Electricity and Power Generation	Thailand	WHAEG	THB 1,520.00	THB 1,520.00	THB 10.00	25.01
14. Gulf TS4 Co., Ltd.	Gulf TS4	Electricity and Power Generation	Thailand	WHAEG	THB 1,470.00	THB 1,470.00	THB 10.00	25.01
15. Gulf NLL2 Co., Ltd.	Gulf NLL 2	Electricity and Power Generation	Thailand	WHAEG	THB 1,440.00	THB 1,440.00	THB 10.00	25.01
Joint Venture Companies of WHAET								
16. Gheco-One Co., Ltd.	Gheco-I	Electricity and Power Generation	Thailand	WHAET	THB 11,624.00	THB 11,624.00	THB 10.00	35.00
17. Houay Ho Thai Co., Ltd.	HHTC	Electricity and Power Generation	Thailand	WHAET	THB 422.15	THB 422.15	THB 10.00	51.00
18. Houay Ho Power Co., Ltd. ^{/2}	HHPC	Electricity and Power Generation	Laos	HHTC	USD 40.00	USD 40.00	USD 80.00	25.00
19. Glow IPP Co., Ltd.	GIPP	Electricity and Power Generation	Thailand	WHAET	THB 2,850.00	THB 2,850.00	THB 10.00	5.00
Joint Venture Companies of WHASL								
20. WHA Gunkul Green Solar Roof 1 Co., Ltd.	WHA Gunkul 1	Producing and distributing electricity by solar photovoltaic rooftop	Thailand	WHASL	THB 11.50	THB 11.50	THB 10.00	74.99

Company Name	Abbreviation	Nature of Business	Registered in	Shareholder	Registered Capital (Million)	Paid-up Capital (Million)	Par Value (Per Share)	Percentage of shares held by the Company
Joint Venture Companies of WHASL								
21. WHA Gunkul Green Solar Roof 3 Co., Ltd.	WHA Gunkul 3	Producing and distributing electricity by solar photovoltaic rooftop	Thailand	WHASL	THB 14.50	THB 14.50	THB 10.00	74.99
22. WHA Gunkul Green Solar Roof 6 Co., Ltd.	WHA Gunkul 6	Producing and distributing electricity by solar photovoltaic rooftop	Thailand	WHASL	THB 14.50	THB 14.50	THB 10.00	74.99
23. WHA Gunkul Green Solar Roof 17 Co., Ltd.	WHA Gunkul 17	Producing and distributing electricity by solar photovoltaic rooftop	Thailand	WHASL	THB 16.00	THB 16.00	THB 10.00	74.99
24. Gulf Solar Co., Ltd.	Gulf Solar	Producing and distributing electricity by solar photovoltaic rooftop	Thailand	WHASL	THB 35.44	THB 35.44	THB 10.00	25.01
25. Gulf Solar TS1 Co., Ltd.	Gulf Solar TS 1	Producing and distributing electricity by solar photovoltaic rooftop	Thailand	Gulf Solar	THB 7.38	THB 7.38	THB 10.00	99.99
26. Gulf Solar TS2 Co., Ltd.	Gulf Solar TS 2	Producing and distributing electricity by solar photovoltaic rooftop	Thailand	Gulf Solar	THB 5.55	THB 5.55	THB 10.00	99.99
27. Gulf Solar BV Co., Ltd.	Gulf Solar BV	Producing and distributing electricity by solar photovoltaic rooftop	Thailand	Gulf Solar	THB 7.66	THB 7.66	THB 10.00	99.99
28. Gulf Solar KKS Co., Ltd.	Gulf Solar KKS	Producing and distributing electricity by solar photovoltaic rooftop	Thailand	Gulf Solar	THB 14.67	THB 14.67	THB 10.00	99.99

Company Name	Abbreviation	Nature of Business	Registered in	Shareholder	Registered Capital (Million)	Paid-up Capital (Million)	Par Value (Per Share)	Percentage of shares held by the Company
Joint Venture Companies of WUPSD								
29. Duong River Surface Water Plant Joint Stock Company	SDWTP	Production and distribution of tap water	Vietnam	WUPSD	VND 999,611.00	VND 999,611.00	VND 10,000	34.00
Joint Venture Companies of WUPNA								
30. Cua Lo Water Supply Joint Stock Company	CUA LO	Production and distribution of tap water	Vietnam	WUPNA	VND 48,269.59	VND 48,269.59	VND 10,000	47.31

Note : /1 Rayong Clean Energy Company Limited and Glow Hemaraj Wind Company Limited registered the dissolution of the company on 19 November 2019. At present, on process of liquidation for registration of the completeness of liquidation.

/2 Houay Ho Thai Company Limited held 25% in Houay Ho Power Company Limited which registered in Lao People's Democratic Republic. US 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.

OTHER REFERENCES

SHARE REGISTRAR

Thailand Securities Depository Company Limited

Head office	93 The Stock Exchange of Thailand Building, Ratchadaphisek Road, Dindaeng Bangkok 10400 Thailand
Telephone	02-009-9999
Fax	02-009-9991

DEBENTURE REGISTRAR

Bank of Ayudhya Public Company Limited

Head office	1222 Rama III Road, Bangpongpan, Yannawa Bangkok, 10120 Thailand
Telephone	02-296-3582
โทรสาร	02-683-1298

AUDITOR

Pricewaterhouse Coopers ABAS Limited

Head office	179/74-80, 15 th Floor, Bangkok City Tower, South Sathorn Road, Bangkok, 10120 Thailand
Telephone	02-344-1000
โทรสาร	02-286-5050

LEGAL ADVISOR

RL Counsel Company Limited

Head office	62/15 Thaniya, Suriyawongse Sub District, Bangrak District, Bangkok, 10500 Thailand
Telephone	0-2235-3339
โทรสาร	0-2235-3076

OTHER MATERIAL INFORMATION

There is no other information which may materially affect investors' decisions.

INFORMATION ON SECURITIES AND SHAREHOLDERS

REGISTERED CAPITAL AND PAID-UP CAPITAL

As of 31 December 2019, the Company's registered capital was THB 3,825 million, and its paid-up capital was THB 3,825 million, divided into 3,825 million ordinary shares with a par value of THB 1 per share. The Company's Extraordinary General Meeting of Shareholders No. 1/2017 held on 30 June 2017, the meeting approved the amendment to the par value of the shares from Baht 5 per share to be Baht 1 per share.

SHAREHOLDERS

MAJOR SHAREHOLDERS

As 31 December 2019, the shareholding structure can be summarised as follows:

No.	Shareholders	Number of shares	Percent.
1	WHA Group		
	WHA Industrial Development Public Company Limited ¹	2,633,999,970	68.86
	WHA Industrial Development International (SG) Co., Ltd. ²	43,500,010	1.14
	Total	2,677,499,980	70.00
2	Miss Jareeporn Jarukornsakul Group		
	Miss Jareeporn Jarukornsakul	34,499,800	0.90
	WHA Holding Co., Ltd ³	72,581,665	1.90
	Miss Chatchamol Anantaprayoon	17,081,813	0.45
	Total	124,163,278	3.25
3	Bangkok Life Assurance Public Company Limited	79,833,100	2.09
4	Thai NVDR Company Limited	49,417,787	1.29
5	STATE STREET EUROPE LIMITED	34,484,448	0.90
6	Muang Thai Life Assurance Public Company Limited	20,206,800	0.53
7	Miss Supitchaya Phupisut	18,314,986	0.48
8	Mr. Chaiwat Phupisut	16,684,956	0.44
9	PHATRA LTFD	16,367,500	0.43
10	AIA COMPANY LIMITED-EQAP-D FUND 1	15,417,292	0.40
	Total top 10 major shareholders	3,052,390,127	79.80
	Other shareholders	772,609,873	20.20
	Total	3,825,000,000	100.00

Note : 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 Ventures Holding Co., Ltd. and other shareholders hold 98.54 per cent.

WHA Ventures Holding Company Limited is a holding company with 99.99 per cent of its shares currently held by WHA Corporation Public Company Limited.

2/ WHA Industrial Development International (SG) Co., Ltd. is an investment company incorporated under the law of Singapore. As of 31 December 2019. All of its shares are indirect held by WHA Industrial Development Public Company Limited.

3/ WHA Holding Co., Ltd. is a holding company. As of 31 December 2019, its registered capital was THB 5 million divided into one million shares, with a par value of THB 5 per share. The shareholders are as follows:

No.	Shareholders	Number of shares	Per cent.
1	Mr. Somyos Anantaprayoon	500,000	50.0
2	Miss Jareeporn Jarukornsakul	499,999	50.0
3	Miss Jaruwan Jarukornsakul	1	0.0
Total		1,000,000	100.0

SHAREHOLDER AGREEMENT

As of 31 December 2019, the Company has no the major shareholder agreement. However, the Company or Subsidiary (case by case) has the shareholder agreement between the shareholders in associate and joint ventures.

OTHER SECURITIES

As of 31 December 2019, the Company has the debentures. The details are as follows:

Debenture	Amount (Million Baht)	Coupon (Percent)	Tenor (Years) / Maturity Date)	Rating by TRIS
WHAUP208A	3,200	3.33% p.a. Semi-annually payment	3 Years Maturity date : 18 August 2020	A-
WHAUP208B	800	3.33% p.a. Semi-annually payment	2.9 Years Maturity date : 10 August 2020	A-
WHAUP216A	2,390	2.65% p.a. Semi-annually payment	3 Years Maturity date : 26 June 2021	A-
WHAUP236A	1,290	3.17% p.a. Semi-annually payment	5 Years Maturity date : 26 June 2023	A-
WHAUP256A	1,320	3.66% p.a. Semi-annually payment	7 Years Maturity date : 26 June 2025	A-

DIVIDEND POLICY

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 POLICY OF THE SUBSIDIARIES

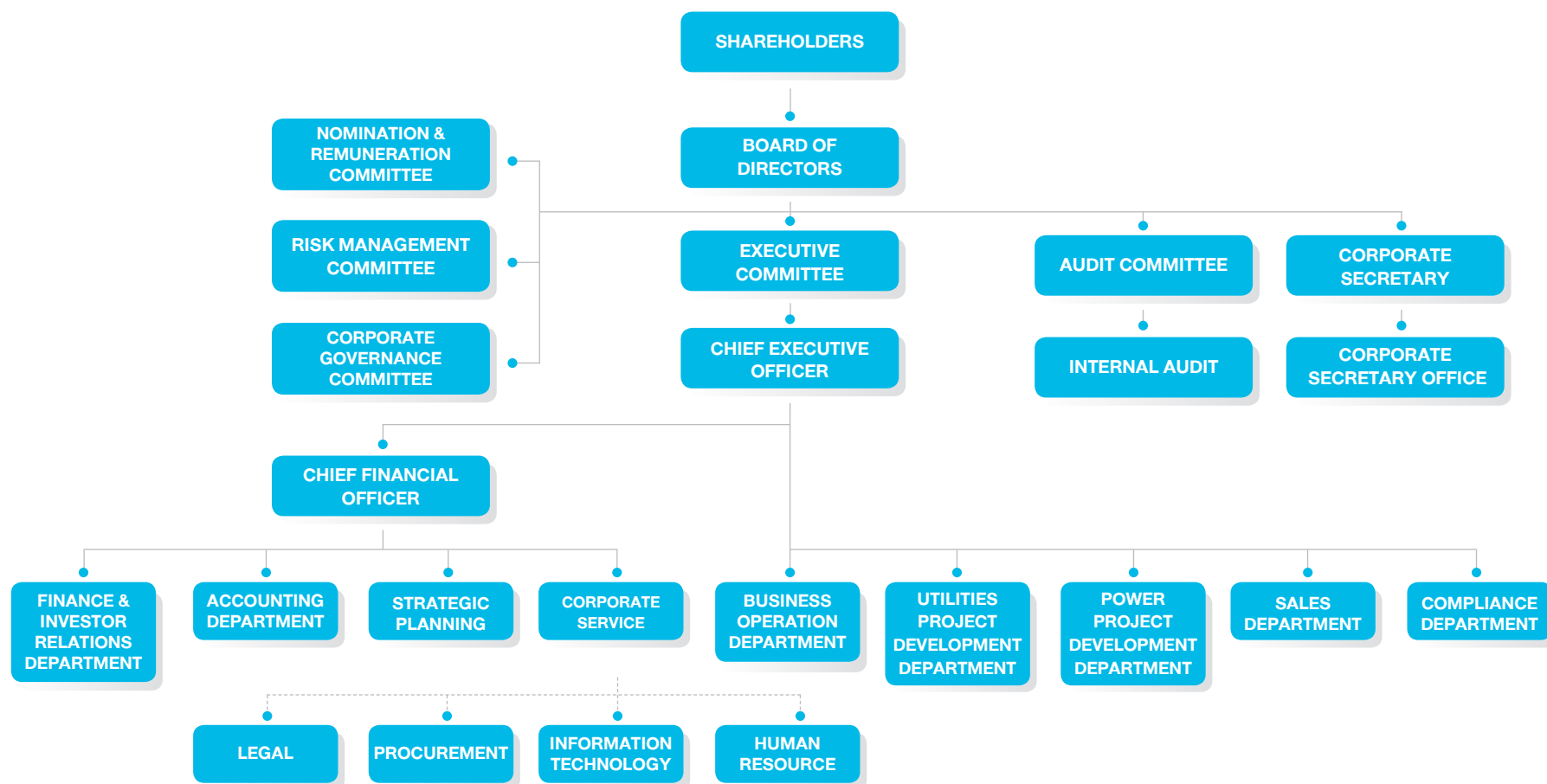
Each Subsidiary's dividend payment policy is to pay dividends in the amount of not less than 50 per cent of the net profit after deducting corporate income tax and other reserve funds as required by law in each year. However, the dividend payment of each Subsidiary may take into account the financial 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.

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.

MANAGEMENT STRUCTURE

As of 31 December 2019, the management 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 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.

BOARD OF DIRECTORS

As of 31 December 2019, the Board of Directors is comprised of 8 Directors as follows:

Name	Position
1. Miss Jareeporn Jarukornsakul	<ul style="list-style-type: none"> Chairman of the Board of Directors Chairman of the Executive Committee Chairman of the Risk Management Committee Nomination and Remuneration Committee member
2. Mr. David Richard Nardone	<ul style="list-style-type: none"> Director Executive Committee member Risk Management Committee member
3. Mr. Vivat Jiratikarnsakul	<ul style="list-style-type: none"> Director Executive Committee member Corporate Governance Committee member
4. Mr. Wisate Chungwatana	<ul style="list-style-type: none"> Director Executive Committee member Chief Executive Officer
5. Mr. Weidt Nuchjalearn	<ul style="list-style-type: none"> Independent Director Chairman of Audit Committee Chairman of the Nomination and Remuneration Committee
6. Mr. Ekajai Tivutanond	<ul style="list-style-type: none"> Independent Director Audit Committee member Corporate Governance Committee member Nomination and Remuneration Committee member
7. Mrs. Punnee Worawuthichongsathit	<ul style="list-style-type: none"> Independent Director Audit Committee member Chairman of the Corporate Governance Committee
8. Mr. Surathian Chakthranont	<ul style="list-style-type: none"> Director Risk Management Committee member

Miss Nutchra Rattanajitbanjong acts as the secretary of the Board of Directors.

AUTHORIZED DIRECTORS

The Company's authorized directors are Ms. Jareeporn Jarukornsakul signs jointly with Mr. David Richard Nardone or Mr. Wisate Chungwatana or Mr. Vivat Jiratikarnsakul, making a total of two (2) persons, together with the Company's seal affixed.

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.

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.
4. 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;
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 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;

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

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.



ATTENDANCE AT THE BOARD OF DIRECTORS' MEETINGS.

Details of the attendance at the meetings of the Board of Directors the Audit Committee, Executive Committee, Risk Management Committee, Corporate Governance Committee and Nomination and Remuneration Committee on a period of 1 January 2019 to 31 December 2019 are as follows:

Name	Position	Board of Directors 8 members Meeting 11 Time	Audit Committee 3 members Meeting 6 Time	Executive Committee 5 members Meeting 12 Time	Corporate Governance Committee 3 members Meeting 2 Time	Risk Management Committee 3 members Meeting 2 Time	Nomination and Remuneration Committee 3 members Meeting 5 Time	shareholders' meeting 8 members Meeting 1 Time
1. Miss Jareeporn Jarukornsakul	<ul style="list-style-type: none"> Chairman of the Board of Director Chairman of the Executive Committee Chairman of the Risk Management Committee Nomination and Remuneration Committee 	11/11		12/12		2/2	5/5	1/1
2. Mr. David Richard Nardone	<ul style="list-style-type: none"> Director Executive Committee Risk Management Committee 	11/11		12/12		2/2		1/1
3. Mr. Vivat Jiratikarnsakul	<ul style="list-style-type: none"> Director Executive Committee Corporate Governance Committee 	11/11		12/12	2/2			1/1
4. Mr. Wisate Chungwatana	<ul style="list-style-type: none"> Director Executive Committee 	11/11		12/12				1/1
5. Mr. Weidt Nuchjalearn	<ul style="list-style-type: none"> Director Chairman of the Audit Committee/ Independent Director Chairman of the Nomination and Remuneration Committee 	8/11	5/6				5/5	1/1

Name	Position	Board of Directors 8 members Meeting 11 Time	Audit Committee 3 members Meeting 6 Time	Executive Committee 5 members Meeting 12 Time	Corporate Governance Committee 3 members Meeting 2 Time	Risk Management Committee 3 members Meeting 2 Time	Nomination and Remuneration Committee 3 members Meeting 5 Time	shareholders' meeting 8 members Meeting 1 Time
6. Mr. Ekajai Tivutanond	<ul style="list-style-type: none"> • Director • Audit Committee/ Independent Director • Corporate Governance Committee • Nomination and Remuneration Committee 	11/11	6/6		2/2		5/5	1/1
7. Mrs. Punnee Worawuthi-chongsathit	<ul style="list-style-type: none"> • Director • Audit Committee/ Independent Director • Chairman of the Corporate Governance Committee 	9/11	6/6		2/2			1/1
8. Mr. Surathian Chakthranont	<ul style="list-style-type: none"> • Director • Risk Management Committee 	11/11				2/2		1/1
9. Mr. Paopitaya Smutrakalin ⁽¹⁾	• Executive Committee			8/8				
10. Mr. Natthapatt Tanboon-ek ⁽²⁾	• Executive Committee			3/3				

Note : (1) Resigned from Member of the Executive Committee, effective on 19 July 2019

(2) Appointed as Member of the Executive Committee in the Board of Directors Meeting no. 7/2018 on 19 July 2019

SHAREHOLDING REPORT OF THE BOARD OF DIRECTORS AND THE COMPANY'S MANAGEMENT IN 2019

(Inclusive of Spouse or Cohabiting couple, and Minor)

Information as of 31 December 2019:

Name – Surname Company's Directors	No. of Share (shares)		No. of Shares Addition (Reduction) During the Year
	As of 31 Dec 2018	As of 31 Dec 2019	
1. Miss Jareeporn Jarukornsakul	34,499,800	34,499,800	-
By Spouse or Cohabiting couple, and Minor Children	-	17,081,813	17,081,813
By Legal entity hold shares at an amount exceeding 30%	72,581,665	72,581,665	-
2. Mr. David Richard Nardone	-	-	-
By Spouse or Cohabiting couple, and Minor Children	-	-	-
3. Mr. Vivat Jiratikarnsakul	-	-	-
By Spouse or Cohabiting couple, and Minor Children	-	-	-
4. Mr. Wisate Chungwatana	100,000	100,000	-
By Spouse or Cohabiting couple, and Minor Children	-	-	-
5. Mr. Weidt Nuchjalearn	-	-	-
By Spouse or Cohabiting couple, and Minor Children	-	-	-
6. Mr. Ekajai Tivutanond	-	-	-
By Spouse or Cohabiting couple, and Minor Children	-	-	-
7. Mrs. Punnee Worawuthichongsathit	-	-	-
By Spouse or Cohabiting couple, and Minor Children	-	-	-
8. Mr. Surathian Chakthranont	-	-	-
By Spouse or Cohabiting couple, and Minor Children	-	-	-
Company's Executives			
1. Mr. Wisate Chungwatana Chief Executive Officer	100,000	100,000	-
By Spouse or Cohabiting couple, and Minor Children	-	-	-
2. Dr. Niphon Bundechanan Deputy Chief Financial Officer	-	-	-
By Spouse or Cohabiting couple, and Minor Children	-	-	-
3. Mr. Natthapatt Tanboon-ek Chief Financial Officer	-	-	-
By Spouse or Cohabiting couple, and Minor Children	-	-	-
4. Mr. Khamhoung Ratsamany Vice President – Business Operation	-	-	-
By Spouse or Cohabiting couple, and Minor Children	-	-	-
5. Mr. Varanon Laosuwan Director – Utilities Project Development	-	-	-
By Spouse or Cohabiting couple, and Minor Children	-	-	-
6. Mr. Punrapee Noparumpa Director – Power Project Development	-	-	-
By Spouse or Cohabiting couple, and Minor Children	-	-	-

Name – Surname Company's Executive	No. of Share (shares)		No. of Shares Addition (Reduction) During the Year
	As of 31 Dec 2018	As of 31 Dec 2019	
7. Mr. Sakvithu Saedan Director of Business Operation By Spouse or Cohabiting couple, and Minor Children	-	-	-
8. Mrs. Rattana Shinawatra Director – Accounting By Spouse or Cohabiting couple, and Minor Children	-	-	-
9. Miss Nutch Rattanajitbanjong Corporate Secretary By Spouse or Cohabiting couple, and Minor Children	-	-	-

EXECUTIVES

As of 31 December 2019, the Company has 8 the executives:

Name	Position
1. Mr. Wisate Chungwatana	Chief Executive Officer
2. Dr. Nipon Bundechanan	Deputy Chief Executive Officer
3. Mr. Natthapatt Tanboon-ek	Chief Financial Officer
4. Mr. Khamhoung Ratsamany	Vice President - Business Operation
5. Mr. Sakvithu Saedan	Director of Business Operation
6. Mr. Varanon Laosuwan	Director - Utilities Project Development
7. Mr. Punrapee Noparumpa	Director - Power Project Development
8. Mrs. Rattana Shinawatra	Director - Accounting

Note : (1) Appointed as Deputy Chief Executive Officer on 19 December 2019 and will take on the role of Chief Executive Officer on 1 March 2020 as the resolution of the Board of Directors Meeting No. 11/2019.

DUTIES AND RESPONSIBILITIES OF THE CHIEF EXECUTIVE OFFICER

- 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.
- 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.
- 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.
- 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.

COMPANY SECRETARY

The Board of Directors' meeting No. 5/2017, held on 30 May 2017, approved the appointment of Miss 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.

REMUNERATION OF DIRECTORS AND EXECUTIVES

REMUNERATION OF DIRECTORS

(1) MONETARY REMUNERATION

The Annual General Meeting of Shareholders 2019, held on 26 April 2019, approved the remuneration of the directors and sub-committee of the Company for year 2019, 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	<ul style="list-style-type: none"> Chairman THB 200,000 /year Director THB 150,000 /year 	<ul style="list-style-type: none"> Chairman THB 30,000 /time Director THB 25,000 /time
Executive Committee	-	<ul style="list-style-type: none"> Chairman THB 25,000 /time Member THB 15,000 /time
Audit Committee	-	<ul style="list-style-type: none"> Chairman THB 25,000 /time Member THB 15,000 /time
Corporate Governance Committee	-	<ul style="list-style-type: none"> Chairman THB 25,000 /time Member THB 15,000 /time
Nomination and Remuneration Committee	-	<ul style="list-style-type: none"> Chairman THB 25,000 /time Member THB 15,000 /time
Risk Management Committee	-	<ul style="list-style-type: none"> 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 share of profit of associates and joint ventures for that year.

Details of the remuneration of the Company's directors and committees for year 2019 are as follows:

(Unit: THB Baht)

Name	Yearly Remuneration	Meeting Allowance						Bonus	Total
		Board of Directors	Audit Committee	Executive Committee	Corporate Governance Committee	Risk Management Committee	Nomination & Remuneration Committee		
1 Miss Jareeporn Jarukornsakul	200,000.00	330,000.00		300,000.00		50,000.00	125,000.00	1,048,171.00	2,053,171.00
2 Mr. David Richard Nardone	150,000.00	275,000.00		180,000.00		30,000.00		969,803.00	1,604,803.00
3 Mr. Vivat Jiratikarnsakul	150,000.00	275,000.00		180,000.00	30,000.00			969,803.00	1,604,803.00
4 Mr. Wisate Chungwatana	150,000.00	275,000.00		180,000.00				969,803.00	1,574,803.00
5 Mr. Weidt Nuchjalearn	150,000.00	200,000.00	125,000.00				75,000.00	969,803.00	1,519,803.00
6 Mr. Ekajai Tivutanond	150,000.00	275,000.00	90,000.00		30,000.00		75,000.00	969,803.00	1,589,803.00
7 Mrs. Punnee Worawuthichongsathit	150,000.00	225,000.00	90,000.00		50,000.00			969,803.00	1,484,803.00
8 Mr. Surathian Chakthranont	150,000.00	275,000.00				30,000.00		969,803.00	1,424,803.00
9 Mr. Paopitaya Smutrakalin				120,000.00					120,000.00
10 Mr. Natthapatt Tanboon-ek				45,000.00					45,000.00

(2) OTHER REMUNERATIONS

- None -

REMUNERATION OF EXECUTIVES

(1) MONETARY REMUNERATION

Details of remuneration of executives of the Company (excluding remuneration as directors) for the year ended 31 December 2018 and 31 December 2019 are as follows:

	Year 2018	Year 2019
Number of persons	8	8
Total remuneration (THB million)	34.69	34.72

(2) OTHER REMUNERATIONS

For the year 2019, the Company contributed to the provident fund to the management as employees of the Company at THB 1.62 million.

PERSONNEL

NUMBER OF PERSONNEL

The number of personnel of the Company and its Subsidiaries (excluding executives) across the divisions of the Company as of 31 December 2018 and 31 December 2019 was as follows:

Divisions	Number of personnel	
	As of 31 December 2018	As of 31 December 2019
Operation	68	73
Utilities	3	3
Power	4	5
Accounting	3	3
Finance and Investor Relations	4	5
Corporate Secretary Office	3	3
Compliance	1	2
Management Support	7	6
Total	93	100

REMUNERATION OF PERSONNEL (EXCLUDING EXECUTIVES)

For the year 2018 and 2019, the Company paid remuneration to employees (excluding executives) in the amount of THB 40.30 million and THB 60.33 million, respectively, as follows:

	Fiscal year ended 31 December 2018	Fiscal year ended 31 December 2019
Monthly salary ¹	38.53	58.04
Other remunerations ²	1.77	2.29
Total	40.30	60.33

Notes : ¹ Including bonus

² Including provident fund.

LABOUR DISPUTES FOR THE PAST 3 YEARS

As of 31 December 2019, the Company and its subsidiaries have no pending material labour disputes for the past 3 years which would have a material impact on the Company's and its subsidiaries' assets, shareholders' equity and/or the operation of Company and its subsidiaries.

PERSONNEL DEVELOPMENT POLICY

1. DEVELOPMENT OF DIRECTORS AND EXECUTIVES

- 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.



CORPORATE GOVERNANCE

CORPORATE GOVERNANCE POLICY

The Company regards good corporate governance principles as an important factor in promoting efficiency and sustainable growth, ultimately translating into greater value for its stakeholders, including its employees, partners, customers, investors and other stakeholders. The board of directors has put in place a corporate governance policy which covers all material principles, including structure, roles, duties and responsibilities of directors, and principles of management in order to gain transparency and verifiability in business operation. This policy acts as a guideline for the management of the Company to gain confidence that that Company operates its business with fairness and takes into account the ultimate benefits of shareholders and stakeholders.

The board of directors gives precedence to this corporate governance policy, which covers the following five categories:

CATEGORY 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 at least 30 days 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 Portal system of the Stock Exchange of Thailand at least 30 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.

CATEGORY 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 30 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.

CATEGORY 3: ROLE OF STAKEHOLDERS

The Company regards the role of shareholders as highly important and values the rights of all stakeholders by adhering to the following policies:

(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, and scholarships for the children of employees.
- 3) To protect the work environment by adhering to health and safety regulations

NUMBERS OF ACCIDENTS AT WORK IN 2019

	Unit	Number	
		Year 2018	Year 2019
Number of accidents resulting in working day lost	Person	0	0
Number of persons injured of work	Person	0	0
Number of day lost	Day	0	0
Number of death toll	Person	0	0

- 4) To give extensive and constant opportunities to employees to empower them to reach their full potential

IN 2019, TRAINED EXECUTIVES AND EMPLOYEES ARE AS FOLLOWS:

	Total Training Hour (hrs./year)		Average Training Hour (hrs./person/year)	
	Year 2018	Year 2019	Year 2018	Year 2019
Executives and Employees	1,107	1,495	11	13

- 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:

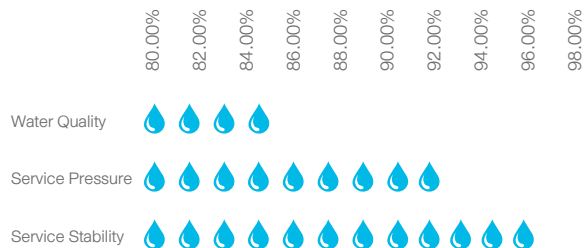
- 1) To provide customers with recognised procedures relating to the production process, to focus on the consolidation and development of production technology and to regularly check the quality of products
- 2) To provide customers with recognised procedures in order to strictly and regularly comply 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

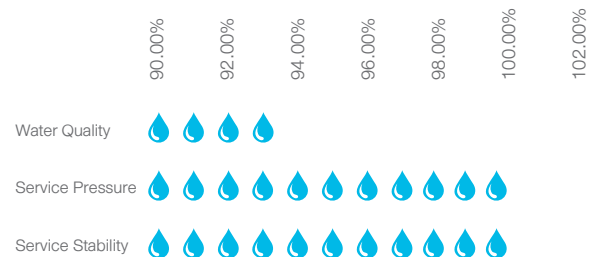
IN 2019, THE CUSTOMER SATISFACTION RELATING TO THE COMPANY'S PRODUCTS AND SERVICES RATED "GOOD - VERY GOOD"



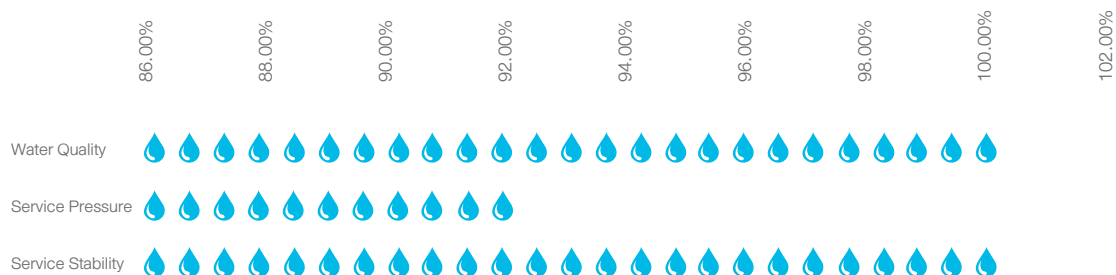
PROCESS WATER SATISFACTION



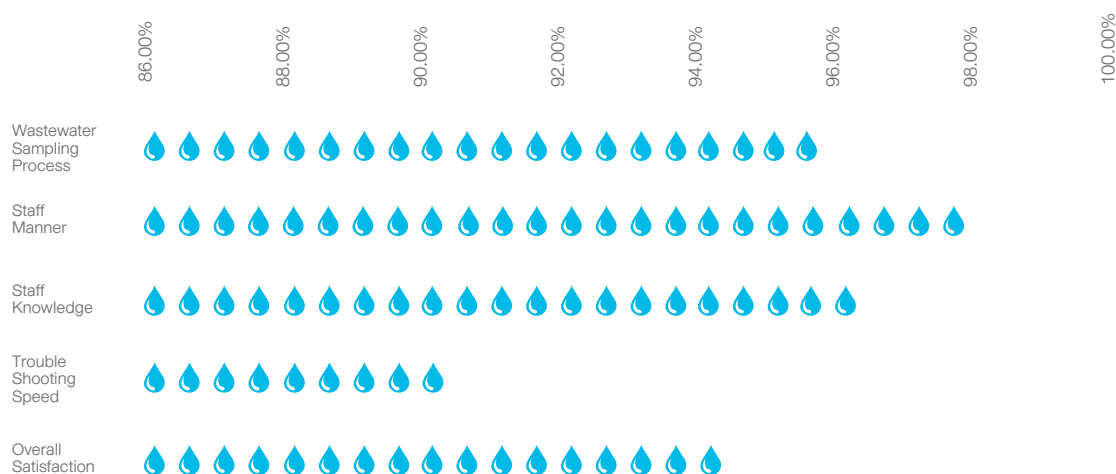
CLARIFY WATER SATISFACTION



RAW WATER SATISFACTION



WASTE WATER TREATMENT SATISFACTION



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.

(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.
- 3) Not to destroy competitors' reputation by malicious accusation.

(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 ISO 14001. 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. A summary of the training syllabus is below:

Training Course	Training Hour	Number of participants
1. Water Pollution Operator	12	11
2. Solar Cell Operations and Maintenance (SCM)	24	1

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.

(9) POLICY ON 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, 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.

WHISTLE-BLOWING 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)**
www.wha-up.com
- 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 2019, the Company received no significant complaint raised by both insiders and outsiders.

CATEGORY 4 : 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.

CATEGORY 5 : RESPONSIBILITIES OF THE BOARD OF DIRECTORS

(1) BOARD STRUCTURE

The board of directors of the Company comprises of at least five persons. One third of the board shall be independent directors and such independent directors consist of no fewer than three members in accordance with the rules of the SEC. The board should comprise of persons from various professions, including business, accounting and finance which relate to and support the Company's business. There are five other committees: the Executive committee, Audit committee, Nomination and Remuneration committee, Risk Management committee and Corporate Governance committee.

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.

The policy relating to the terms of directors shall be in accordance with the Company's articles of association, which state that in the annual ordinary meeting of shareholders of the Company, one third of the directors must annually retire from office. Those who have the longest term shall retire first. The term of a director is three years. A retiring director is eligible for re-appointment through a shareholders' meeting.

In addition, the Company shall ensure appointment of the Executive committee, Audit committee, Nomination and Remuneration committee and Risk Management committee and clearly provide the scope of authorities, duties and responsibilities of such committees in order to achieve a balance of power, as well as appoint the Company Secretary to perform the duties and coordinate compliance with the resolution of the board.

INDEPENDENCE OF DIRECTORS

The board of directors of the Company comprises of eight directors consisting of three independent directors which is one-third of the total number of directors of the Company in accordance with the Notification of the Capital Market Supervisory Board No. Tor Chor. 39/2559 Re: Application for and Approval of Offer for Sale of Newly Issued Shares. However, the Chairman of the board of directors is not an independent director, according to the recommendation specified in the Principles of Good Corporate Governance of the SET, the number of independent directors should be more than half of the total directors.

The Company viewed that the board structure is transparent, sufficient and able to protect the shareholders' and the Company's benefit; since there are three independent directors, according to the office of SEC's requirement. Each of independent directors and audit committee 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.

(2) ROLES, 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. 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.

1) CORPORATE GOVERNANCE POLICY

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, 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.

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, the intranet system and information board 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.

3) 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.

4) INTERNAL CONTROLS AND INTERNAL AUDIT SYSTEMS

The Company recognises the importance of an efficient internal control and internal audit system and therefore assigned the Audit committee the task of reviewing the Company's internal control system, and internal audit system which consists of the following five elements: control environment, risk assessment, control activity, information and communication, and monitoring and evaluation. This is in line with the guidelines set forth by the Committee of Sponsoring Organization of the Tread Way Commission. The Audit committee will report to the board of directors.

INTERNAL AUDIT

The Company set up an independent internal audit division, Dharmniti Auditing Co., Ltd. for the year 2019 which the internal audit manager shall control the internal audit system and directly report to the Audit committee. The internal audit manager has the key responsibility of reviewing and evaluating the efficiency of the Company's internal audit system in accordance with the annual evaluation form approved by the Audit committee. It must also regularly report to the Audit committee on a quarterly basis in order to improve the effectiveness of the Company's operations.

The appointment, removal and transfer of the internal audit manager shall be approved by the Audit committee.

5) PROCEDURES ON GOVERNING SUBSIDIARIES OR ASSOCIATES

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.

(3) THE BOARD OF DIRECTORS' MEETING AND COMMITTEE MEETING

BOARD OF DIRECTORS

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 2020 at the Board of Directors' Meeting No. 9/2019 on 8 November 2019.

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 7 working days before the said Meeting occurs. Top executives 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 2019, The Company managed a total of 11 Board Meetings, 6 Audit Committee Meetings, 12 Executive Committee Meetings, 2 Corporate Governance Committee Meetings, 2 Risk Management Committee Meetings, 4 Nomination and Remuneration Committee Meetings and 1 Non-Executive Directors 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 number of meetings and attendance of each director and subcommittee is disclosed in the Annual disclosure (Form 56-1) and the Annual report of the Company as described in the topic "Management Structure".

EXECUTIVE COMMITTEE

The Company will have the Executive committee meeting regularly, at least four times per year on a quarterly basis, and the meeting will be scheduled and notified in advance.

The Executive committee's duties should not only include meeting attendance, but should also cover the exchange of opinions, recommendations, experiences and connections to enhance the Company's benefits.

AUDIT COMMITTEE

The Company will have the Audit committee meeting regularly, prior to the board of directors' meeting, at least four times per year on a quarterly basis. The meeting will be scheduled and notified in advance.

NOMINATION AND REMUNERATION COMMITTEE

The Company will have the Nomination and Remuneration committee meeting regularly, at least two times per year, prior to the board of directors' meeting. The meeting will be scheduled and notified in advance.

RISK MANAGEMENT COMMITTEE

The Company will have the Risk Management committee meeting regularly, at least two times per year, and prior to the board of directors' meeting. The meeting will be scheduled and notified in advance.

CORPORATE GOVERNANCE COMMITTEE

The Company will have the Corporate Governance committee meeting regularly, at least two times per year, and prior to the board of directors' meeting. The meeting will be scheduled and notified in advance.

(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 2019 ARE SHOWN, AS FOLLOWS:

Performance Evaluation of the Board of Directors	Average	Evaluation
Board of Directors	98.73	Excellent
Individual Directors	99.53	Excellent
Audit Committee	100.00	Excellent
Nomination and Remuneration Committee	94.44	Excellent
Corporate Governance Committee	97.14	Excellent
Risk Management Committee	93.75	Excellent

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.

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.

(5) REMUNERATION FOR THE BOARD OF DIRECTORS AND THE TOP EXECUTIVES

The Company provides the policy on the remuneration for the board of directors and the top executives, which will be based on the duties, responsibilities and achievements

connected to the Company's performance and related factors. The remuneration of the top executive will be considered and reviewed by the Nomination and Remuneration committee which shall be further reviewed and approved by the board of directors. The remuneration of the board of directors and the board of committees will be considered and reviewed by the Nomination and Remuneration committee which shall be further reviewed and approved by the board of directors before proposing for review and approval at the shareholders meeting.

(6) DEVELOPMENT OF DIRECTORS AND EXECUTIVES

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.

DEVELOPMENT ACTIVITIES AND TRAINING ATTENDED BY DIRECTORS AND EXECUTIVE IN 2019

No.	Name - Surname / Position	Training Course in year 2019
1	Miss Jareeporn Jarukornsakul Chairman of the Board of Directors	<ul style="list-style-type: none"> Digital Transformation, Nation Media Group
2	Mr. David Richard Nardone Director	<ul style="list-style-type: none"> Asean Economic Outlook 2019, the American Chamber of Commerce, Thailand Digital Transformation, Nation Media Group Foreign Chambers Alliance (FCA) Eastern Seaboard Business Planning, the American Chamber of Commerce, Thailand Are Thailand SME Ready for the Robotics & Artificial Intelligent (AI) Era, Northeastern University Auto Industry Briefing & 2020 Outlook, the American Chamber of Commerce, Thailand
3	Mr. Ekajai Tivutanond Director	<ul style="list-style-type: none"> Advance Audit Committee Program (AACP 32/2019), Thai Institute of Directors Association (IOD)
4	Mr. Wisate Chungwatana Director and Chief Executive Officer	<ul style="list-style-type: none"> Top Executive Program (Class 28/2019), Capital Market Academy (CMA)
5	Mr. Natthapatt Tanboon-ek Chief Financial Officer	<ul style="list-style-type: none"> New Revenue Recognition Criteria according to TFRS 15 for General Business Program (Class 4/2019), Federation of Accounting Professions (TFAC) Summary of changes and significant issues of TFRS (revised version) Program (Class 2/2019), Federation of Accounting Professions (TFAC)

(7) 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.

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.

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.

(8) 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.

(10) RISK MANAGEMENT

The Company will assign a Risk Management committee to be in charge of setting up a working group comprising the Company executives to jointly discuss and regularly evaluate the risk in the organization for internal and external risks and set risk management measures. Working group will monitor the risks as identified with support from various divisions and report the result to Risk Management committee for acknowledgement. Risk Management committee will, subsequently, evaluate the efficiency in respect of risk management and report it to the Board of Directors at least once a year to identify the weakness and to adjust the policy with more efficiency.

(9) 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.

SUB-COMMITTEE

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.

(1) AUDIT COMMITTEE

As of 31 December 2019, the Company has three members of the Audit Committee:

1. **Mr. Weidt Nuchjalearn**
Chairman of the Audit Committee
2. **Mr. Ekajai Tivutanond**
Audit Committee member
3. **Mrs. Punnee Worawuthichongsathit**
Audit Committee member

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 Mrs. Rattana Shinawatra 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 Board of Directors 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 recognize 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.

(2) EXECUTIVE COMMITTEE

As of 31 December 2019, the Company has five members of the Executive Committee:

1. **Miss Jareeporn Jarukornsakul**
Chairman of the Executive Committee
2. **Mr. David Richard Nardone**
Executive Committee member
3. **Mr. Vivat Jiratikarnsakul**
Executive Committee member
4. **Mr. Wisate Chungwatana**
Executive Committee member
5. **Mr. Natthapatt Tanboon-ek**
Executive Committee member

Miss Nutch Rattanajitbanjong 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 organizations 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.
- The Executive Committee is authorized by the Board of Directors 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.

(3) CORPORATE GOVERNANCE COMMITTEE

As of 31 December 2019, the Company has three members of the Corporate Governance Committee:

1. **Mrs. Punnee Worawuthichongsathit**
Chairman of the Corporate Governance Committee
2. **Mr. Ekajai Tivutanond**
Corporate Governance Committee member
3. **Mr. Vivat Jiratikarnsakul**
Corporate Governance Committee member

Miss Nutchra Rattanajitbanjong acts as the secretary of the Corporate Governance Committee.

DUTIES AND RESPONSIBILITIES OF THE CORPORATE GOVERNANCE COMMITTEE

- 1) To consider, review and revise the corporate governance 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.

(4) RISK MANAGEMENT COMMITTEE

As of 31 December 2019, the Company has three members of the Risk Management Committee:

1. **Miss Jareeporn Jarukornsakul**
Chairman of the Risk Management Committee
2. **Mr. David Richard Nardone**
Risk Management Committee member
3. **Mr. Surathian Chakthranont**
Risk Management Committee member

Miss Nutch 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 organization 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 directors' 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.

(5) NOMINATION AND REMUNERATION COMMITTEE

As of 31 December 2019, the Company has three members of the Nomination and Remuneration Committee:

1. **Mr. Weidt Nuchjalearn**
Chairman of the Nomination and Remuneration Committee
2. **Miss Jareeporn Jarukornsakul**
Nomination and Remuneration Committee member
3. **Mr. Ekajai Tivutanond**
Nomination and Remuneration Committee member

Miss Nutch 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 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
- qualification according to such prescribed in regulation of SET and SEC which the Company's Independent Director's Definition as follows:
1. Neither being shareholder holding more than one per cent of shares of the Company, parent company, subsidiaries, associates, majority shareholders or controlling persons, including shares held by related persons of such independent director;
 2. Neither being nor used to be an executive director, employee, staff, advisor who receives a salary, or controlling person of the Company, its parent company, subsidiaries, associates, same-level subsidiary company, major shareholder or controlling person, unless the foregoing status has ended not less than two years prior to the date of appointment. Such prohibited characteristic shall not include the case where the independent director used to be a government official or advisor of a government unit which is a major shareholder or controlling person of the Company;
 3. Not being a person related by blood or legal registration as father, mother, spouse, sibling, and child, including spouse of child of other directors, executive, majority shareholder, controlling person, or person to be nominated as director executive or controlling person of the Company or its subsidiaries;
 4. Neither having nor used to have a business relationship with the Company, parent company, subsidiaries, associates, majority shareholder or controlling person, in a manner which may interfere with his independent judgement, and neither being nor used to be a significant shareholder or controlling person of any person having a business relationship with the Company, parent company, subsidiaries, associates, majority shareholder or controlling person, unless the foregoing relationship has ended not less than two years prior to the date of filing an application with the Office;

THE NOMINATION OF THE BOARD OF DIRECTORS

(1) INDEPENDENT DIRECTOR

The Company has prescribed qualification of independent director which having higher qualification compare to the

The term business relationship shall include any normal business transaction, rental or lease of immovable property, transaction relating to assets or services or granting or receipt of financial assistance through receiving or extending loans, guarantee, providing

assets as collateral, and any other similar actions, which result in the Company or its counterparty being subject to indebtedness payable to the other party in the amount of three percent or more of the net tangible assets of the Company or twenty million baht or more, whichever is lower. The amount of such indebtedness shall be calculated according to the method of calculation of value of connected transactions under the Notification of the Capital Market Supervisory Board governing rules on connected transactions mutatis mutandis. The consideration of such indebtedness shall include indebtedness occurred during the period of one year prior to the date on which the business relationship with the person commences;

5. Neither being nor used to be an auditor of the Company, parent company, subsidiaries, associates, majority shareholder or controlling person, and not being a significant shareholder, controlling person, or partner of an audit firm which employs auditors of the applicant, its parent company, subsidiary company, associates, majority shareholder or controlling person, unless the foregoing relationship has ended not less than two years prior to the date of filing an application with the Office;
6. Neither being nor used to be a provider of any professional services including those as legal advisor or financial advisor who receives service fees exceeding two million baht per year from the Company, parent company, subsidiaries, associates, majority shareholder or controlling person, and not being a significant shareholder, controlling person or partner of the provider of professional services, unless the foregoing relationship has ended not less than two years prior to the date of filing an application with the Office;
7. Not being a director appointed as representative of directors of the Company, majority shareholders or shareholder who is related to majority shareholders;
8. Not undertaking any business in the same nature and in competition to the business of the Company or subsidiaries or not being a significant partner in a partnership or being an executive director, employee, staff, advisor who receives a salary or holding shares exceeding one per cent of the total

9. Not having any other characteristics which cause the inability to express independent opinions with regard to the Company's business operations;
10. Not being a director assigned by the board of directors to make a decision on the business operation of the Company, subsidiaries, associates, same-level subsidiary company, majority shareholders or controlling person; and
11. Not being a director of a subsidiary company or same-level subsidiary company of the listed company.

(2) NOMINATION OF THE BOARD OF DIRECTORS

Nomination and Remuneration Committee is responsible for director nomination by considering of diversity on qualification, experiences, appropriateness, and skill as director. 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
- 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.
2. The scope of duties and responsibilities of the directors of subsidiaries and associates are as follows:

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.
- (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.

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.
- (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 authorisation shall not constitute authorisation or sub-authorisation in a 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.

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

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 as described in the topic "Management Structure".

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.
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.

REMUNERATION OF THE AUDITOR

For the year ended 31 December 2019, the Company and its subsidiaries paid PricewaterhouseCoopers ABAS Ltd. (PwC) for the audit of the consolidated financial statements in the amount of THB 2,810,000. The person or business related to the auditor and the audit office is not a person or business related to the Company and there have the Non-Audit fees of THB 594,000.

IMPLEMENTATION OF CORPORATE GOVERNANCE CODE FOR LISTED COMPANIES 2017 AND GOOD CORPORATE GOVERNANCE GUIDELINES IN OTHER ASPECTS

The Board of Directors formulated the CG Policy in written form in 2016, and the most updated version was issued in 2018. 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 2017, The Company regularly studied and reviewed rules, notices and guidelines on good corporate governance.

Moreover, the Board of Directors considered applying the practice guidelines outlined in Corporate Governance Code for Listed Companies 2017 (the CG Code) developed by the Securities and Exchange Commission (SEC) into the Company business operations e.g.:

- 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 12 November 2018 to 12 January 2019.
- The Company submitted news releases to SET's SCP system. On 22 February 2019, a resolution was passed by the Board to set the AGM 2019 date. The Company published the AGM invitation notice 2019 via the Company's website in both Thai and English for at least 30 days prior to the date of the AGM (25 March 2019) 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 (4 April 2019). 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 2019 on Friday, 26 April 2019 at Watergate Ballroom Room, 6th Floor, Amari Watergate Bangkok Hotel. The Company ensured that the meeting venue has enough room to accommodate shareholders in attendance. Furthermore, the Company also provided an Investor Relations (IR) Corner to facilitate shareholders, and sufficient amount of snacks and beverages to accommodate shareholders upon arrival.
- 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 (9 May 2019) through SET's SCP system and on the Company's website.
- To show the commitment to countering corruption, the Company developed a self-assessment form for anti-corruption measures, which accompanies supporting evidence related to business policy, measures and procedures, and its internal control system. All documents were submitted to the CAC panel as part of the Company's application for CAC membership. The Company was recognized as a "Certified Company" on 4 November 2019, a proof of its commitment to transparent business, which promotes good image and confidence among stakeholders.
- The Board offers opportunities for the public to file complaints about 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. No significant complaint on ethics was filed this year.

In 2019, the Company was rated on corporate governance practice as follows:

- Rated "Excellent" according to Corporate Governance Report of Thai Listed Companies 2019 carried out by the Thai Institute of Directors (IOD).
- Rated 100 points according to the evaluation of the quality of Annual General Meeting of Shareholders 2019 (AGM checklist) of listed companies carried out by the Thai Investors Association.

In summary, in 2019, the Company complied with all elements of the corporate governance policy for listed companies as required by SET, with exception for the following point. First is **the 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. Another point is **a 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 three 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.

CORPORATE SOCIAL RESPONSIBILITY

The Company conducts its business in accordance with the principles of corporate governance: with transparency and accountability. It aims to concurrently improve its business and maintain a balance of economic, social and environmental awareness. One of the Company's pledges is to be a good corporate citizen, which operates sustainably, grows steadily and gains public recognition based on its code of ethics and corporate governance. The Company also strives for healthy returns to shareholders; however, any effects of its operations may have on all stakeholders are always taken into account.

Taking the view that social responsibility is important, the Company has established a CSR policy consisting of the following components:

1. FAIR CONDUCT

Guidelines to treat all stakeholders with responsibility are provided in the Company's code of conduct. Stakeholders include shareholders, employees, customers, trading partners, creditors, competitors, as well as local communities, wider society, the environment and government agencies. The Company's code of conduct also embraces the principles of free competition, the prevention of conflicts of interest and infringements of intellectual property rights, and anti-corruption. Key policies can be summarized as follows:

(1) CORPORATE GOVERNANCE

The Company aims to operate fairly, honestly and transparently, and with public accountability, as well as disclose material information. It always considers both the benefits and effects that may be experienced by shareholders, customers, trading partners, employees and all stakeholders. The Company considers the right and fair sharing of profit to be crucial.



(2) CORPORATE SOCIAL RESPONSIBILITY (CSR)

The Company pursues the CSR policy under the code of ethics to ensure fairness toward all stakeholders. The principles of corporate governance also serve as guidelines for the Company to maintain a balance between its performance and its economic, community, social and environmental awareness, which will lead to the success and sustainability of its business.

(3) COMPLIANCE POLICY

The Company recognizes the significance of compliance with applicable laws, rules and regulations, including the code of conduct in accordance with international standards. All of its directors, executives and employees must comply with applicable laws, rules and regulations and avoid being involved in, supporting or otherwise dealing with a breach of law and related regulations.

(4) RESPONSIBLE USE OF RESOURCES

All of the Company's directors, executives and employees are encouraged to appropriately, efficiently and sustainably use resources for the utmost benefit. The Company always communicates with all employees and stakeholders to promote and educate about the responsible use of resources for the benefit of the organization, to ensure awareness of resource management is inherent in the Company.

2. RESPECT FOR HUMAN 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.

3. FAIR LABOUR PRACTICES

The employees' right to enjoy a working life in a good and respectful environment is highlighted on the Company's agenda. Employees at all levels are encouraged to treat their colleagues with respect. Taking advantage of other colleagues is ardently discouraged. In relation to labour practices, the Company has a comprehensive policy of human resources management involving recruitment, HR development and training, fair remuneration and welfare benefits. All employees are offered opportunities for career prospects, with training courses provided to employees at all levels with a view to improving their professional skills. Key policies of the Company can be summarized as follows:

(1) REMUNERATION AND WELFARE BENEFITS

The Company has a policy to provide fair remuneration, enhance job security and promote career paths for all employees. It provides all necessary employee welfare benefits as required by law, such as social security benefits. Also offered are extra welfare benefits other than those required by law, such as health and accident insurance, financial contributions towards the funeral costs of employee's parents, and scholarships for the children of employees.

(2) KNOW-HOW IMPROVEMENT AND TRAINING

The Company promotes HR development by encouraging all employees to improve upon their knowledge, and enhance their ability, potential, attitude, morals and ethics, and embrace the spirit of teamwork. Training workshops and seminars are organized from time to time to effect those improvements. Further, the Company supports corporate and human resources development, focusing on efficiently implementing operating procedures, clearly defining the scope of employees' roles and duties, determining appropriate rates of remuneration, improving the performance evaluation system and expanding employee's capacity.

3) OCCUPATIONAL HEALTH AND SAFETY

Company policy stresses the importance of employee occupational health and safety in a good workplace. Great efforts have been made to implement precautionary measures to avoid work-related accidents with great efforts. Safety awareness is established among employees. Training sessions are held from time to time to promote and educate all employees about occupational health (e.g. any acts or things that are detrimental to the health or condition of customers or service users and should be avoided). All employees are encouraged to keep the workspace in a hygienic and safe condition at all times.

4. CONSUMER LIABILITY

The Company commits itself to dealing honestly with customers (in other words, they are consumers) by complying with any agreements made in accordance with applicable standards required by law. Quality control is emphasized in all steps of the production process. The Company recognizes that water quality and safety are a foundation of its operations. In addition, it stresses the importance of ensuring that skilled personnel are available, and the stringent measures of quality control in the production process, from the procurement of the raw materials until the manufactured end products.

5. ECO-FRIENDLY PRACTICE

Environmental protection is one of the Company's concerns. In managing its business in the past, the Company has always taken into account environmental effects which may result from any stage of its operating procedures. For instance, an initial environmental examination is always carried out before construction work is commenced. All necessary operating systems and regulations have been carefully designed and established to prevent potential harmful effects on the environment and local communities. ISO14001 international environmental management standards were adopted as a guideline for the Company's business. With the view that sustainable use of natural resources is crucial, the Company will reuse by-products or residue of the production process, adopt a treatment system to manage wastewater from its manufacturing activities and regularly evaluate the environmental management system.

6. PARTICIPATION IN SOCIAL DEVELOPMENTS

The Company strongly aims to contribute benefits to the country's economy and society and to be a good citizen that complies with all applicable laws and regulations. It also commits itself to improving and elevating the quality of life of locals in proximity to its premises as well as expanding its business at the same time, which constitutes a component of its code of conduct. The Company always operates according to environmental standards; for instance, in the production process, power and resources are efficiently used and preventive measures are taken to control and avoid pollutant products. Environmental management is performed according to well-established standards and is regularly monitored and evaluated for further development.

To foster a good relationship with local communities, the Company always supports local activities and campaigns, taking into account the suitability and benefits to the communities for enhancing sustainable development.

7. GREEN INNOVATION

The Company recognizes the value and importance of non-renewable water resources, as well as the importance of environmental conservation and social responsibility. Therefore, water preservation is a policy imposed to underline the Company's strong commitment to efficiently using resources in its operations and manufacturing activities. The Company also emphasizes power saving practices by adopting innovation and efficient management systems, such as using solar and other alternative energy in its power generation business. It also employs a policy to share know-how and educate customers and other related government bodies about power saving practices.

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

CSR AND ENVIRONMENTAL ACTIVITIES

In 2019, the Company has continued its engagement in CSR activities in three major development areas: education, the environment, and youth capacity.



JOINS SCHOOL CONTRIBUTION PROGRAM

For the 22nd consecutive year, WHAUP joined WHA Group's school contribution program, which delivered school supplies and sports equipment intended for 19,100 students from 67 schools around WHA's industrial estates in Rayong and Chonburi province. This annual School Contribution Program, a WHA CSR initiative in collaboration with over 50 companies in its industrial estates, recognizes the role of education as a key to socioeconomic development. The team was led by Mr. Punrapee Noparumpa, Director of Power Project Development of WHA Utilities and Power PLC.



COMPLETION AND DELIVERY OF CSR PROJECT: WASTEWATER MANAGEMENT AND TREATMENT PROJECT IN PLUAK DAENG, RAYONG UNDER CLEAN WATER FOR PLANET INITIATIVE

Ms. Jareeporn Jarukornsakul, Chairman of WHA Utilities and Power PCL, delivered the wastewater project to Mr. Sakorn Arjraksa, President of Pluak Daeng Sub-District Administrative Organization, Rayong Province, in the presence of Mr. Vivat Jiratikarnsakul, Director of WHA Utilities and Power PCL and Mr. Wisate Chungwatana, Chief Executive Officer of WHA Utilities and Power PLC.

WHAUP announced the completion and delivery of a wastewater management and treatment facility for the Pluak Daeng Sub-District Administrative Organization in

Rayong Province. The new facility, located close to Eastern Seaboard Industrial Estate (Rayong) (ESIE) in Pluak Daeng, has a capacity of 400 cubic meters per day, consisting of a Constructed Wetland that involves a natural technology using plants and microorganisms. The new wastewater management and treatment system was first inspired by the efforts and projects of H.M. King Bhumibol Adulyadej the Great to treat wastewater biologically. As part of WHA's CSR initiative "Clean Water for Planet", the project aims to improve water quality, ensure access to clean and safe water and raise awareness among the community.





ORGANIZES 40TH BLOOD DONATION CAMPAIGN FOR RAYONG RED CROSS

The Company, in cooperation with the Rayong Provincial Red Cross Chapter, recently held its 40th blood collection activity at the WHA Eastern Industrial Estate (Map Ta Phut) (WHA EIE). A total of 86,450 cc. of blood was collected from 195 donors, including employees, customers, local government officers and residents, to help protect the blood supply and save lives of needy community members.



GIVES FREE FLU SHOTS FOR THE ELDERLY IN CHONBURI PROVINCE

The Company recently visited 5 areas in Chonburi province to administer 400 doses of influenza vaccines to senior citizens. The Company team, explained to community members the importance of boosting their immune system to lower the risk of serious illness especially during the rainy season. Held at temples, schools or community centre, the campaign to promote good health and well-being is part of WHA's social commitment to members of the neighbouring communities.

INTERNAL CONTROL AND RISK MANAGEMENT

BOARD'S OPINION ON INTERNAL CONTROL

The Company have placed the significance of good internal control system and corporate governance in the conduct of its business, i.e. implementing the operating system which is transparent, fair and reliable with checks and balances, which will lead ultimately to the benefit of shareholders, employees, trading partners, communities and other stakeholders. At the Board of Directors meeting no.6/2558 of 19 November 2015, the Company's board appointed Audit Committee consisting of three members to review the adequacy of the Company's internal control system and to check and ensure compliance with applicable laws and regulations issued by the Office of the Securities and Exchange Commission (SEC) and the Stock Exchange of Thailand (SET), including all other applicable laws relating to the Company's business.

At the Board of Directors' meeting no.1/2020, held on February 28, 2020 in which all members of the Audit

Committee attended the Board of Directors considered and prepared the internal control sufficiency evaluation form of the Company. The questionnaire was completed by management, in conjunction with reference information from an analysis report on the adequacy of the Company's internal controls prepared by Dharmniti Internal Audit Company Limited. The board took the view that the Company's internal control system is adequate and appropriate and reflects the questions set out in the SEC questionnaire on the adequacy of internal controls. The Board of Director's analysis of the Company's internal control included the following aspects:

1. Control environment
2. Risk assessment
3. Control activities
4. Information and communication
5. Monitoring activities



HEAD OF INTERNAL CONTROL AND HEAD OF COMPLIANCE

The Company appointed Dharmniti Internal Audit Company Limited (Dharmniti) as the Company's internal auditor, and Dharmniti designated Ms. Somcharee Kawkomdee to take charge of the Company's annual internal audit.

After reviewing the background of Dharmniti and Ms. Somcharee Kawkomdee, the Audit Committee found that Ms. Somcharee Kawkomdee is suitable for the designated function, considering her independence to make a judgment

with more than 14 years' experience in internal audit and her understanding of the Company's activities and operations. Therefore, the Audit Committee viewed that she is qualified for this mission. An appointment, removal or transfer of the head of internal control requires an approval from the Audit Committee. Qualifications of the heads of internal control are set out as follows:

HEAD OF INTERNAL AUDIT - DHARMNITI INTERNAL AUDIT COMPANY LIMITED

Subject	Internal auditor (external)
Internal auditor	Ms. Somcharee Kawkomdee (in charge of internal audit) Dharmniti Internal Audit Company Limited
Educational qualifications	Bachelor of Humanities and Social sciences, Major of Accounting, Burapha University
Work experience	More than 14 years' experience and works with Dharmniti Internal Audit Company Limited from 2006 until present.
Audit Committee's opinion on the internal auditor's experience	Ms. Somcharee Kawkomdee's knowledge and experience made her suitable to oversee the internal control for the Company.
Duties and responsibilities	<ul style="list-style-type: none"> - To examine various operating systems of the Company as the audit committee determines or thinks fit. - To advise the Audit Committee on an annual internal audit plan.

The Audit Committee Meeting No.5/2018 on 9 November, 2018 approved the internal control system audit plan for the year 2019, to consist of compliance with the Anti-Corruption measures, the human resource management process, process for maintenance of wastewater treatment and

industrial water, the good corporate governance assessment by the Standard of Corporate Governance report of Thai Listed Companies (CGR) and internal control as required by the Securities and Exchange Commission (SEC).

DETAILS RELATING TO DIRECTORS OF THE COMPANY AND SUBSIDIARIES

COMPANY		Ms. Jareeporn Jarukornsakul	Mr. David Richard Nardone	Mr. Vivat Jiratikarnsakul	Mr. Wisate Chungwatana	Mr. Weidt Nuchjalearn	Mr. Ekajai Tivutanonda	Mrs. Punnee Worawuthichongsathit	Mr. Surathian Chakthranont	Mr. Natthapatt Tanboon-ek	Mr. Khamhoung Ratsamany	Mr. Sakvithu Saedan	Mr. Varanon Laosuwan	Mr. Punrapee Noparumpa	Mrs. Rattana Shinawatra	Mr. Nguyen Huu Duc	Ms. Siau Kuei Lian
WHA Utilities and Power Public Co., Ltd.		X	I	I	I, III	II, IV	II, IV	II, IV	I	III	III	III	III	III	III		
WHA Water Co., Ltd.	Subsidiaries	X	I	I	I												
WHA Energy Co., Ltd.	Subsidiaries	X	I	I	I												
WHA Energy 2 Co., Ltd.	Subsidiaries	X	I	I	I												
WHAUP International Co., Ltd.	Subsidiaries	X	I	I	I												
WHA Solar Co., Ltd.	Subsidiaries	X	I	I	I												
WHAUP (SG) 1 PTE. Limited	Subsidiaries	X	I	I	I												I
WHAUP (SG) 2 PTE. Limited	Subsidiaries	X	I	I	I												I
WHAUP (SG) 2DR PTE. Limited	Subsidiaries	X	I	I	I												I
WHAUP Nghe An Joint Stock Company	Subsidiaries	X	I	I	I												

Note : X = Chairman of the Board of Directors/ I = Director/ II = Independent Director/ III = Executive/ IV = Audit Committee

COMPANY		Ms. Jareeporn Jarukornsakul	Mr. David Richard Nardone	Mr. Vivat Jiratikarnsakul	Mr. Wisate Chungwatana	Mr. Weidt Nuchjalearn	Mr. Ekajai Tivutanonda	Mrs. Punnee Worawuthichongsathit	Mr. Surathian Chakthranont	Mr. Nathapatt Tanboon-ek	Mr. Khamhoung Ratsamany	Mr. Sakvithu Saedan	Mr. Varanon Laosuwan	Mr. Punrapee Noparumpa	Mrs. Rattana Shinawatra	Mr. Nguyen Huu Duc	Ms. Siau Kuei Lian
Cua Lo Water Supply Joint Stock Company	Joint Venture Companies				I											I	
Duong River Surface Waterplant Joint Stock Company	Joint Venture Companies	I		I	I												
Eastern Seaboard Clean Energy Co., Ltd.	Joint Venture Companies	X			I					I							
Chonburi Clean Energy Co., Ltd.	Joint Venture Companies	X			I					I							
Gheco-One Co., Ltd.	Joint Venture Companies		I	I	I												
Houay Ho Thai Co., Ltd.	Joint Venture Companies			I	I					I							
Houay Ho Power Co., Ltd.	Joint Venture Companies			I	I												
Glow IPP Co., Ltd.	Joint Venture Companies																
B.Grimm Power (WHA) 1 Ltd.	Joint Venture Companies	I			I					I							
WHA Gunkul Green Solar Roof 1 Co., Ltd.	Joint Venture Companies	I			I					I							
WHA Gunkul Green Solar Roof 3 Co., Ltd.	Joint Venture Companies	I			I					I							
WHA Gunkul Green Solar Roof 6 Co., Ltd.	Joint Venture Companies	I			I					I							
WHA Gunkul Green Solar Roof 17 Co., Ltd.	Joint Venture Companies	I			I					I							
Gulf WHA MT Natural Gas Distribution Co., Ltd.	Joint Venture Companies	I			I					I							

Note : X = Chairman of the Board of Directors/ I = Director/ II = Independent Director/ III = Executive/ IV = Audit Committee

COMPANY		Ms. Jareeporn Jarukornsakul	Mr. David Richard Nardone	Mr. Vivat Jiratikarnsakul	Mr. Wisate Chungwatana	Mr. Weidt Nuchjalearn	Mr. Ekajai Tivutanonda	Mrs. Punnee Worawuthichongsathit	Mr. Surathian Chakthranont	Mr. Natthapatt Tanboon-ek	Mr. Khamhoung Ratsamany	Mr. Sakvithu Saedan	Mr. Varanon Laosuwan	Mr. Punrapee Noparumpa	Mrs. Rattana Shinawatra	Mr. Nguyen Huu Duc	Ms. Siau Kuei Lian
WHA Eastern Seaboard NGD2 Co., Ltd.	Joint Venture Companies	I			I					I							
WHA Eastern Seaboard NGD4 Co., Ltd.	Joint Venture Companies	I			I					I							
Gulf JP NLL Co., Ltd.	Joint Venture Companies	I			I												
Gulf Solar Co., Ltd.	Joint Venture Companies	I			I												
Gulf Solar BV Co., Ltd.	Joint Venture Companies	I			I												
Gulf Solar TS1 Co., Ltd.	Joint Venture Companies	I			I												
Gulf Solar TS2 Co., Ltd.	Joint Venture Companies	I			I												
Gulf Solar KKS Co., Ltd.	Joint Venture Companies	I			I												
Gulf TS1 Co., Ltd.	Joint Venture Companies	I			I												
Gulf TS2 Co., Ltd.	Joint Venture Companies	I			I												
Gulf TS3 Co., Ltd.	Joint Venture Companies	I			I												
Gulf TS4 Co., Ltd.	Joint Venture Companies	I			I												
Gulf VTP Co., Ltd.	Joint Venture Companies	I			I												
Gulf NLL2 Co., Ltd.	Joint Venture Companies	I			I												

Note : X = Chairman of the Board of Directors/ I = Director/ II = Independent Director/ III = Executive/ IV = Audit Committee

RELATED PARTY TRANSACTIONS

PERSONS WITH A POSSIBLE CONFLICT OF INTEREST; 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")	<ul style="list-style-type: none"> Real estate business development and industrial estate management 	<ul style="list-style-type: none"> It is a major shareholder of the Company holding 70% of paid-up capital. (Both direct and indirect) There are 3 common directors: <ol style="list-style-type: none"> Ms. Jareeporn Jarukornsakul Mr. David Richard Nardone Mr. Vivat Jiratikarnsakul
Eastern Seaboard Industrial Estate (Rayong) Company Limited ("ESIE")	<ul style="list-style-type: none"> Real estate business development and industrial estate management 	<ul style="list-style-type: none"> A subsidiary of WHAID, which is the Company's major shareholder holding 60% of the paid-up capital. (Both direct and indirect) There are 3 common directors: <ol style="list-style-type: none"> Ms. Jareeporn Jarukornsakul Mr. David Richard Nardone Mr. Vivat Jiratikarnsakul
WHA Eastern Industrial Estate Co., Ltd. ("WHA EIE")	<ul style="list-style-type: none"> Real estate business development and industrial estate management 	<ul style="list-style-type: none"> A subsidiary of WHAID, which is the ZCompany's major shareholder, holding 99.99% of paid-up capital. (Both direct and indirect)
WHA Eastern Seaboard Industrial Estate Co., Ltd. ("WHA ESIE")	<ul style="list-style-type: none"> Real estate business development and industrial estate management 	<ul style="list-style-type: none"> There are 3 common directors: <ol style="list-style-type: none"> Ms. Jareeporn Jarukornsakul Mr. David Richard Nardone Mr. Vivat Jiratikarnsakul
WHA Rayong Industrial Land Co., Ltd. ("WHA RIL")	<ul style="list-style-type: none"> Real estate development and management of industrial zone projects 	
WHA Saraburi Industrial Land Co., Ltd. ("WHA SIL")	<ul style="list-style-type: none"> Real estate development and management of industrial zone projects 	
WHA Eastern Seaboard Industrial Estate 4 Co., Ltd. ("WHA ESIE4")	<ul style="list-style-type: none"> Real estate business development and industrial estate management 	

Persons who may have conflicts	Nature of Business	Nature of Relationship
WHA Industrial Development Engineering Co., Ltd. ("WHA IDE")	<ul style="list-style-type: none"> Design and construction services 	<ul style="list-style-type: none"> A subsidiary of WHAID, which is the Company's major shareholder, holding 99.99% of paid-up capital. (Both direct and indirect) There are 2 common directors: <ol style="list-style-type: none"> Ms. Jareeporn Jarukornsakul Mr. David Richard Nardone
WHA Industrial Building Co., Ltd. ("WHA IB")	<ul style="list-style-type: none"> Logistics business, selling and renting factory buildings, and finished warehouses 	<ul style="list-style-type: none"> A subsidiary of WHAID, which is the Company's major shareholder, holding 99.99% of paid-up capital. (Both direct and indirect)
WHA Corporation Public Company Limited ("WHA")	<ul style="list-style-type: none"> Logistics business, selling and renting factory buildings, warehouses and other properties 	<ul style="list-style-type: none"> A parent company of WHAID, which is the WHAID's major shareholder, holding 98.54% of paid-up capital. (Both direct and indirect) There is a common directors: <ol style="list-style-type: none"> Ms. Jareeporn Jarukornsakul Mr. David Richard Nardone Mr. Vivat Jiratikarnsakul
WHA Infonite Co., Ltd. ("WHA Infonite")	<ul style="list-style-type: none"> Digital services, data center, Internet connection and other IT services 	<ul style="list-style-type: none"> A subsidiary of WHA, which is the Company's major shareholder, holding 97.67% of paid-up capital. (Both direct and indirect) There is a common directors: <ol style="list-style-type: none"> Ms. Jareeporn Jarukornsakul

TRANSACTIONS BETWEEN THE COMPANY AND ITS SUBSIDIARIES WITH PERSONS WHO MAY HAVE CONFLICT OF INTEREST

Transactions between 2018 and 2019 can be summarized as follows:

1) WATER MANAGEMENT SERVICES

Items	Size of Transaction (Million Baht)		Description	Opinion of the Audit Committee
	Financial year 31 December 2018	Financial year 31 December 2019		
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). The agreement is valid for 3 years and effective from 30 March 2016 and has been extended to expire on 31 December 2021 because the two companies do not have professional staff in water business as a result of business restructuring. The Company charged the average of direct expenses plus a margin of 8% which is comparable to the margins of the same service provider in the market.	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	3.46	3.66		
• WHA IB	0.52	0.55		
Accrued income				
• ESIE	0.29	0.44		
• WHA IB	0.04	0.07		

2) RENTAL SERVICES

Items	Size of Transaction (Million Baht)		Description	Opinion of the Audit Committee
	Financial year 31 December 2018	Financial year 31 December 2019		
Revenue from Rental fee			The Company has entered into an Solar Rooftop Equipment and maintenance services to WHA. The agreement is valid for 15 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 management rate can be compared with other companies providing the same services.
• WHA	2.84	4.50		
Accrued income				
• WHA	0.70	0.74		

3) RAW WATER PROCUREMENT

3.1 Raw water procurement in ESIE

Items	Size of Transaction (Million Baht)		Description	Opinion of the Audit Committee
	Financial year 31 December 2018	Financial year 31 December 2019		
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 entering into a contract to purchase raw water directly from the East Water Development and Management Co., Ltd. ("EASTW") 	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	102.93	95.76		
Accounts payable and accrued expenses				
• ESIE	11.94	10.79		

3.2 Purchase of raw water in industrial estates and other industrial zones

Items	Size of Transaction (Million Baht)		Description	Opinion of the Audit Committee
	Financial year 31 December 2018	Financial year 31 December 2019		
Raw water cost			<ul style="list-style-type: none"> The Company entered into the raw water purchasing contract with WHA ID, WHA EIE WHA ESIE, WHA RIL, WHA SIL, WHA ESIE4 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 since the Company is in the process of entering into a direct contract with EASTW. The raw water price under this contract is equal to the raw water cost of the lessor plus the average of the difference between the cost of the lessor and the price the company has to pay if it buys raw water directly. The Company is responsible for the cost of repairs and maintenance of equipment and assets of the raw water system. 	<p>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.</p>
• WHA ID	43.30	46.25		
• WHA EIE	431.90	428.61		
• WHA ESIE	82.45	90.97		
• WHA RIL	34.12	47.21		
• WHA SIL	2.07	0.09		
• WHA ESIE 4	1.42	3.23		
Accounts payable and accrued expenses				
• WHA ID	3.32	4.84		
• WHA EIE	39.18	38.58		
• WHA ESIE	7.02	9.38		
• WHA RIL	3.03	4.53		
• WHA ESIE 4	0.23	0.25		

4) LEASE OF LAND FOR BUSINESS PURPOSES

Items	Size of Transaction (Million Baht)		Description	Opinion of the Audit Committee
	Financial year 31 December 2018	Financial year 31 December 2019		
Land rent			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 and WHA ESIE 4 to use in the industrial water production business. The rental rate per rai per year is comparable with the market price to be increased by 10% every 5 years, rental to be paid monthly which is the rate that other industrial estates charge from general customers. Each rental agreement is 30 years old, 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	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 ID	3.13	3.13		
• WHA EIE	1.90	1.90		
• WHA ESIE	2.96	2.96		
• WHA ESIE 4	2.08	2.08		
Accounts payable and accrued expenses				
• WHA ID	0.01	0.01		
• WHA EIE	0.01	0.01		
• WHA ESIE	0.01	0.01		

5) MANAGEMENT EXPENSES

Items	Size of Transaction (Million Baht)		Description	Opinion of the Audit Committee
	Financial year 31 December 2018	Financial year 31 December 2019		
Management expenses			<ul style="list-style-type: none"> The Company entered into the Management Contract with WHA ID to provide financial, information and other administrative services. The agreement is valid for 1 year from January 1, 2019 to December 31, 2019. The management fee is calculated based on the costs related with the business plus plus an 8% margin which can be compared to other companies' profit margins in the same business. The Company entered into the Management Contract with WHA regarding the HR Business Partner and Internal Auditor to provide human resource advisory services and monitoring internal control systems . The agreement is valid for 1 year from January 1, 2019 to December 31, 2019. The management fee is calculated based on the costs related with the business plus plus an 8% margin which can be compared to other companies' profit margins 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	14.21	31.99		
• WHA	1.58	1.38		
Accounts payable and accrued expenses				
• WHA ID	2.17	2.67		
Trade accounts payable			<p>The Company contracted WHA IDE to manage and supervise the construction for each water system in each project because HCME has experience in engineering in industrial estates. The Company entered into such contract on January 1, 2019 and would expire on December 31, 2020. Currently, WHA IDE is in the process of supervising the construction of the water production and wastewater treatment systems in WHA ESIE3 industrial estate. 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	0.71	1.38		

6) RENTING THE RIGHT TO PRODUCE AND DISTRIBUTE INDUSTRIAL WATER WITH ESIE

Items	Size of Transaction (Million Baht)		Description	Opinion of the Audit Committee
	Financial year 31 December 2018	Financial year 31 December 2019		
Royalties for production and distribution - Eliminations				
<ul style="list-style-type: none"> ESIE 	8.69	8.69	In 2008, the Company entered into agreements to lease 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 until the end of the contract.	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	Size of Transaction (Million Baht)		Description	Opinion of the Audit Committee
	Financial year 31 December 2018	Financial year 31 December 2019		
Annual royalties			<ul style="list-style-type: none"> In 2008, the Company entered into a lease agreement with WHA ID, WHA EIE and WHA ESIE for a period of 25 years to provide industrial water services to industrial operators. Subsequently, on March 30, 2016, the three contracts were canceled and new contracts were entered into. 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 as follows: <ul style="list-style-type: none"> Year 1-3: 1% per annum of revenue from water business in the project Year 4 onwards: 3% per annum of revenue from water business in the project. <p>The rate of the royalties' fee is comparable to other businesses in the market.</p>	<p>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.</p>
• WHA ID	1.00	2.91		
• WHA EIE	3.48	9.24		
• WHA ESIE	1.61	4.50		
• WHA RIL	0.98	2.67		
• WHA SIL	1.46	4.22		
• WHA ESIE 4	0.03	0.08		
• Accounts payable and accrued expenses				
• WHA ID	0.01	0.29		
• WHA EIE	0.28	0.28		
• WHA ESIE	0.13	0.92		
• WHA RIL	0.07	0.28		
• WHA SIL	0.12	0.91		
• WHA ESIE 4	0.01	0.01		

MANAGEMENT DISCUSSION AND ANALYSIS

WHAUP finished our 2019 with a Net Profit of Baht 2,137.2 million, a 5.1% decrease from 2018 while Normalized Net Profit of Baht 1,792.7 million, a 4.5% increase from 2018.

RESULTS OF OPERATION

(Unit : Million Baht)

Consolidated Financial Statements	2019	2018	% Change
Total Revenue	1,857.2	1,708.3	8.7%
- Utilities Business	1,847.1	1,705.1	8.3%
- Operating Revenue ¹	1,734.3	1,679.7	3.3%
- Other Revenue from Utilities Business ²	112.7	25.4	343.7%
- Power Business	10.2	3.2	221.8%
Costs of Sales and Services	(1,164.4)	(1,120.0)	4.0%
Gross Profit	692.8	588.3	17.8%
Gross Profit from Operation ³	580.1	562.9	3.1%
Other Income ⁴	145.7	162.7	-10.5%
Administrative Expenses	(197.5)	(130.8)	51.0%
Finance Costs	(342.0)	(366.6)	-6.7%
Share of Profit from Investments in Associates and Joint Ventures	1,881.1	2,047.4	-8.1%
Income Tax (Expense) Income	(42.8)	(49.1)	-12.7%
Profit attributable to Owners of the Parent	2,137.2	2,251.9	-5.1%
Foreign Exchange Gain (Loss)	344.5	55.3	523.1%
Write Off Tax	0.0	(71.2) ⁶	-100.0%
Adjustment of Revenue Levelization (TFRS15) ⁵	0.0	551.6 ⁶	-100.0%
Normalized Profit attributable to Owners of the Parent ⁷	1,792.7	1,716.1	4.5%

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

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

³ Gross Profit from Operation excludes Other Revenue from Utilities Business.

⁴ Other Incomes mainly consists of Interest Income from Loans to GHECO-One and Dividends Received from Investments in Glow IPP.

⁵ Revenue Levelization adjustments under TFRS 15 of GHECO-One

⁶ Normalized Profit for 2018 is adjusted with Write Off tax and Adjustments of Revenue Levelization (TFRS 15) for comparison purposes. Normalized Profit for 2019 has effects from TFRS 15.

⁷ Definition of Normalized Profit attributable to Owners of the Parent is changed to Profit attributable to Owners of the Parent excluded Foreign Exchange Gain/Loss from 2Q19 onwards (also retroactive to 1Q19 to the extent affecting YTD 2019).

TOTAL REVENUE

In 2019, Total Revenue was Baht 1,857.2 million, an 8.7% increase from Baht 1,708.3 million in 2018 due to increase of Other Utilities Revenue 343.7% YoY and Operating Revenue 3.3% YoY. The increase of Operating Revenue was attributable to growth of industrial water's sales volume mainly driven from newly COD of 2 SPPs, existing and new customers, additional contribution from Demineralized Water.

GROSS PROFIT AND GROSS PROFIT FROM OPERATION

In 2019, Gross Profit was Baht 692.8 million, a 17.8% increase from Baht 588.3 million in 2018, and Gross Profit from Operation was Baht 580.1 million, a 3.1% increase from Baht 562.9 million in 2018. The increase of Gross Profit from Operation was from the increase of Operating Revenue, whereas Gross Profit increased in higher magnitude mainly as a result of higher Excessive Charge.

SHARE OF PROFIT FROM INVESTMENTS IN ASSOCIATES AND JOINT VENTURES (“SHARE OF PROFIT FROM INVESTMENTS”)

(Unit : Million Baht)

Share of Profit from Investments	2019	2018	% Change
Share of Profit from Investments	1,881.1	2,047.4	-8.1%
- Utilities Business	(13.5)	-	-100.0%
- Power Business	1,894.6	2,047.4	-7.5%
Foreign Exchange Gain (Loss)	344.5	55.3	523.1%
Write Off Tax	-	(71.2)	-100.0%
Adjustment of Revenue Levelization (TFRS15)	-	551.6	-100.0%
Normalized Share of Profit from Investments	1,536.6	1,511.7	1.6%
- Utilities Business	(13.5)	-	-100.0%
- Power Business	1,550.1	1,511.7	2.5%

Normalized Share of Profit from Investments in 2018 is adjusted from Share of Profit with (i) foreign exchange gain/loss, (ii) adjustments of Revenue Levelization (TFRS 15) of 2018 results (for comparison purposes), and (iii) expenses of tax write-off of 2018 results.

Total Normalized Share of Profit was Baht 1,536.6 million, a 1.6% increase from Baht 1,511.7 million of 2018. The increase was mainly additional contribution of GNLL2 which started COD in January 2019 and other SPPs, despite lower contribution from GHECO-One mainly driven by lower Availability Payment Rate and Thai Baht appreciation.

Normalized Share of Profit/(Loss) from Investments of Utilities Business was Baht (13.5) million due to the recognition from Share of Loss from SDWTP which started in November 2019 amounted of Baht (14.3) million. SDWTP started commercial services at the beginning of 2019 with installed capacity of 150,000 cubic meters per day (Phase 1A) and additional installed capacity of 150,000 cubic meters per day (Phase 1B) was ready to start commercial operation from November 2019. Although, SDWTP had average sales volume more than 80% of Phase 1A's installed capacity during November to December but depreciation expense of Phase 1B was already booked in this period, resulting into a loss during November to December as abovementioned.

PROFIT ATTRIBUTABLE TO OWNERS OF THE PARENT

In 2019, Profit attributable to Owners of the Parent was Baht 2,137.2 million, a 5.1% decrease from Baht 2,251.9 million in 2018. The decrease was mainly from :

- 51.0% increase of Administrative Expenses due to accounting adjusted of doubtful debt amounted of Baht 22.5 million in 1Q2018 and professional fee for new projects according business plan;
- 10.5% decrease of Other Income from lower Interest income on loan and bank guarantee from GHECO-One due to full repayment of such loan; and
- 8.1% decrease of Share of Profit from Investment in Associates and Joint Venture due to lower contribution from GHECO-One;

despite favourable impact from higher Gross Profit from Operation, lower Finance Cost and lower Income Tax Expense.

NORMALIZED PROFIT ATTRIBUTABLE TO OWNERS OF THE PARENT

The Normalized Profit attributable to Owners of the Parent is Net Profit attributable to Owners of the Parent adjusted by Foreign Exchange Gain or Loss. For Normalized Share of Profit from Investments in 2018 is adjusted with Write Off Tax and Adjustments of Revenue Levelization (TFRS 15) for comparison purposes.

Foreign Exchange Gain for 2019 was Baht 344.5 million, comparing to gain of Baht 55.3 million in 2018, Write Off tax of Baht 71.2 million and Accounting Adjustment (TFRS 15) of Baht 551.6 million was adjusted to calculate Normalized Profit of 2018. Therefore, the 2019 Normalized Profit attributable to Owners of the Parent was Baht 1,792.7 million, a 4.5% increase from 2018.

SIGNIFICANT EVENTS IN 2019

- From 1 January 2019, the new Thai Financial Reporting Standard in relation to revenue recognition (TFRS 15) has been applied to GHECO-One which resulted Gheco-One to levelize the AP over the contract period rather than the front-loaded AP received from EGAT according to PPA and to record the deferred revenue from the difference between the advance payment due to the front-loaded AP (cash revenue) and the levelized AP (accounting revenue).
- Solar Rooftop had signed new contract of 3.9 MW in 4Q2019, total accumulated newly signed contract in 2019 were 21.3 MW
- WHAUP (SG) 2DR PTE. LTD, a subsidiary of WHAUP signed share purchase agreement to acquired 34.00% of total issued shares in Duong River Surface Water Plant Joint Stocks Company in Vietnam on 7 August 2019. The total value of transactions is VND 2,073.19 Billion (approximately THB 2,762.96 million, using the exchange rate of 0.0013 THB/VND, based on average rate of commercial banks as published by Bank of Thailand on 7 August 2019). The share transfer was completed in end of October 2019
- WHA Eastern Seaboard Industrial Estate 4 (WHANGD 4), the natural gas distribution services, which has its capacity to distribute natural gas up to 2,000,000 MMBTU per year, or 700,000 equity MMBTU per year started the commercial service in WHA Eastern Seaboard Industrial Estate 4.
- A 15-year contract for demineralized water sales with Global Power Synergy PLC ("GPSC"), whose initial orders were 1.5 million cubic meters per year. The commercial services started in October 2019.
- Cua Lo Vietnam Project achieved COD in 3Q2019 with capacity of 13,000 cubic meters per day
- Chonburi Clean Energy Company Limited (CCE), associated company of WHAUP group with 33.33% stake, started commercial operation of its 8.6 MW waste-to-energy power plant in 4Q2019.

PERFORMANCE BY BUSINESS

Total Revenue and Share of Profit/(Loss) of Utilities Business in 2019 was Baht 1,847.1 million and Baht (13.5) million, respectively. Total Revenue and Share of Profit/(Loss) of Utilities Business was Baht 1,833.6 million, a 7.5% increase from 2018. The details have shown in the table below.

(Unit : Million Baht)

Utilities Business	2019	2018	% Change
Revenue from Utilities Business			
- Industrial Water Sales	1,309.5	1,252.6	4.5%
- Raw Water Sales	264.0	268.9	-1.8%
- Wastewater Treatment Services	160.8	158.3	1.6%
- Other Incomes from Utilities Business ¹	112.7	25.4	343.7%
Total Revenue from Utilities Business	1,847.1	1,705.1	8.3%
Share of Profit from Utilities Business	(13.5)	0.0	-100%
Total Revenue & Share of Profit from Utilities Business	1,833.6	1,705.1	7.5%

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

The increare was mainly from:

UTILITIES BUSINESS

- i) The Utilities sales volume
 - Industrial Water sales volume increase from 52.6 million cubic meters in 2018 to 54.8 million cubic meters in 2019, or increased by 4% mainly from COD of GNLL2 and other SPP in 1Q2019, and increase in demand of existing and new IEs customers.
 - Raw Water sales volume decrease from at 16.9 million cubic meters in 2018 to 16.5 million cubic meters in 2019, or decreased by 2%.
 - Wastewater sales volume and management increase from 35.0 million cubic meters in 2018 to 35.4 million cubic meters in 2019, or increased by 2%.
- ii) Other Utilities Revenue, which mainly represented one-time Excessive Charge was Baht 106.8 million in 2019, or increased by Baht 86.0 million.

POWER BUSINESS

In 2019, our Total Revenue from Power Business and Share of Profit from Investment and Dividend Income totalled at Baht 1,979.8 million, a 6.9% decrease from Baht 2,125.6 million in 2018. However, Normalized Total Revenue from Power Business and Share of Profit from Investments and Dividend was Baht 1,635.2 million, a 2.9% increase from 2018.

THE BREAKDOWN OF THE COMPANY'S REVENUE AND SHARE OF PROFIT FROM INVESTMENT AND DIVIDEND INCOME BY CATEGORY OF POWER PLANT ARE FOLLOWING

(Unit : Million Baht)

Power Business	2019	2018	% Change
Revenue from Power Business	10.2	3.2	221.8%
Share of Profit from Power Business	1,894.6	2,047.4	-7.5%
Dividend Income	75.0	75.0	0.0%
Total Revenue from Power Business and Share of Profit from Investments and Dividend	1,979.8	2,125.6	-6.9%
Normalized Total Revenue from Power Business and Share of Profit from Investments and Dividend ¹	1,635.2	1,589.8	2.9%
- IPP	907.0 ²	951.7 ²	-4.7%
- SPP	728.6	647.3	12.6%
- Alternative Energy	16.3	7.7	111.0%
- Power Plants under Constuction and Development ³	(16.7)	(16.9)	1.3%

¹ Definition of Normalized Profit attributable to Owners of the Parent is changed to Profit attributable to Owners of the Parent excluded Foreign Exchange Gain/Loss from 2Q19 onwards (also retroactive to 1Q19 to the extent affecting YTD 2019).

² Normalized Profit for 2018 is adjusted with Adjustments of Revenue Levelization (TFRS 15) for comparison purposes. Normalized Profit for 2019 has effects from TFRS 15.

³ CCE is classified under "Power Plants under Constuction and Development" since it started operation November 2019

IPP

- For 2019, 3 IPPs generated Baht 907.0 million of Normalized Share of Profit and Dividend, a 4.7% decrease from 2018 due to lower contribution from GHECO-One and lower power dispatch of HHPC.

WHAUP is a strategic co-developer of power business. We currently have total installed capacities of 559 equity MW under operation, and another 24.4 equity MW under construction. We partner with a number of key Thai and international power developers, namely the Glow Group, the Gulf Group, the B. Grimm Power Group, SUEZ, the Gunkul Group, and Mitsui and Tokyo Gas. In addition, WHAUP has also developed and operated its own Renewable Energy Projects for industrial customers started from Solar Rooftop Projects. WHAUP recognized Power Business performance in a form of (i) Revenue, (ii) Share of Profit, and (iii) Dividend Income. Share of Profit is a net profit in proportion of our equity stake (%). Such Share of Profit is net of all relevant costs in the Associates or Joint Ventures.

SPP

- For 2019, 8 SPPs generated Baht 728.6 million of Normalized Share of Profit, a 12.6% increase from 2018 mainly due to newly COD of GNLL2 and solid operation of other SPPs.

ALTERNATIVE ENERGY

- For 2019, Solar Rooftop Projects (8.9 Equity MW) generated Baht 10.2 million of Revenue and Share of Profit to WHAUP.

PROJECTS UNDER CONSTRUCTION

UTILITIES

- WHA ESIE 3 water treatment plant is scheduled to achieve COD in 1Q2020 with capacity of 3,600 cubic meter per day and wastewater treatment plant 1,500 cubic meter per day.
- WHAUP Nghe An Vietnam water treatment plant is scheduled to achieve COD in 3Q2020 with capacity of 9,600 cubic meter per day.

POWER

- In 4Q2019, Solar Rooftop had signed new 4.0 MW, total accumulated capacity in pipe line are 24.4 MW which are under construction and scheduled to achieve COD in 1Q2020-3Q2020.

Power plant	Type of power	Category of producer	Equity holding (%)	Installed Capacity (MW)	Equity Capacity (MW)	Commercial Operation Date
Solar Rooftop	Solar	Private PPA	100	24.4	24.4	1Q2020- 3Q2020
Total				24.4	24.4	

OVERALL PERFORMANCE

OPERATING EXPENSE

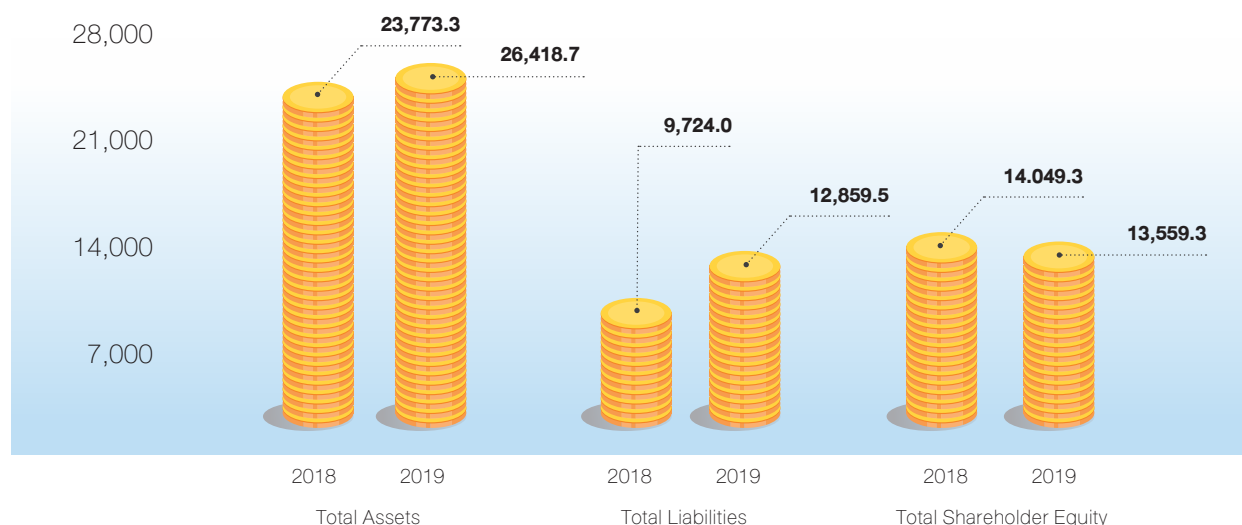
- Administrative Expenses increased from Baht 130.8 million in 2018 to Baht 197.5 million in 2019 due to accounting adjusted of doubtful debt amounted of Baht 22.5 million in 2018, and increase of professional fee for new projects according to business plan.
- Finance Cost decreased from Baht 366.6 million in 2018 to Baht 342.0 million in 2019 due to bond issuance to refinance the existing bank loan totaling of Baht 4,000 million in June 2018.

As a result, Our Gross Profit Margins was 37.3% in 2019 increased from 34.4% in 2018. Gross Profit Margins of excluding Other Utilities Revenue was 33.4% in 2019 relatively flat compared to 33.5% in 2018 due to higher depreciation expense from the expansion pipeline system.

For our 2019 EBITDA was Baht 2,740.9 million, compared to Baht 2,854.8 million in 2018, or decrease by 4.0%.

FINANCIAL POSITION

(Unit: Million Baht)



The Consolidated Balance Sheet as of 31 December 2019 is summarized as follows.

ASSETS

As at 31 December 2019, the Company's total Assets was Baht 26,418.7 million, increased by Baht 2,645.4 million from Baht 23,773.3 million at year-end 2018. The increase was mainly from increase of an investment in associates amounted of Baht 2,694.2 million from Duong River project.

The key elements of Assets in the Company's Consolidated Financial Statements consisted of: (i) Investments in associates of Baht 14,587.6 million, (ii) Building and Equipment (net) of Baht 3,950.2 million (iii) Goodwill of Baht 2,772.9 million, (iv) Intangible assets of Baht 1,918.2 million and (v) Net Trade and Other Receivables Baht 811.4 million.

LIABILITIES

As of 31 December 2019, Total Liabilities was Baht 12,859.5 million, increased by Baht 3,135.5 million from Baht 9,724.0 million at year-end 2018 mainly due to increase of Current Portion of Long Term Liabilities Baht 4,123.1 million and increase of Short-Term from financial institutions Baht 1,765.0 million. Net Interest-bearing Debt as of 2019 was Baht 11,002.1 million, increase from Baht 8,134.5 million at the end of 2018.

Total Liabilities mainly consisted of Long-term Borrowings of Debentures amounted Baht 4,994.3 million, Current Portion of Long-term Borrowing from financial institutions amounted Baht 4,123.1 million, Short-Term Loan from financial institutions Baht 1,765 million and Provision for Liabilities from the water business amounted Baht 340.5 million.

SHAREHOLDERS' EQUITY

As of 31 December 2019, Total Shareholders' Equity was Baht 13,559.3 million, decreased by Baht 490.0 million from Baht 14,049.3 million at the end of 2018, mainly decreased from adopting new accounting standard (TFRS 15) in Retained Earnings.

As at 31 December 2019, the Company's Debt-to-Equity ratio was 0.95x, increased from 0.69x at the end of 2018. The Net Interest-bearing Debt-to-Equity ratio was 0.81x at the end of 2019, increased from 0.58x at the end of 2018. The increase was mainly from increase of Short-Term from financial institutions Baht 1,765.0 million and decrease of Total Shareholder Equity from adopting new accounting standard TFRS 15.

KEY FINANCIAL RATIOS

	2019	2018
Gross Profit Margin	37.3%	34.4%
Net Profit Margin ¹	55.0%	57.5%
Return on Equity	15.5%	16.9%
Debt/Equity Ratio	0.95x	0.69x
Net Interest-bearing Debt/Equity Ratio	0.81x	0.58x

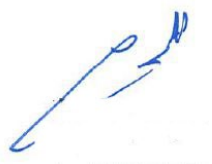
¹ Net profit margin is calculated by dividing the Net Profit attributable to Owners of the Parent by Revenue from Sales and Services and Share of Profit from Investments in Associates and Joint Ventures and other income



REPORT ON RESPONSIBILITIES OF THE BOARD OF DIRECTORS TOWARDS THE FINANCIAL REPORT OF THE YEAR 2019

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 2019 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 2019 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 2019 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.



(Miss. Jareeporn Jarukornsakul)

Chairman of the Board of Directors

28 February 2020



(Mr. Wisate Chungwatana)

Director & CEO

28 February 2020

RISK MANAGEMENT COMMITTEE REPORT

DEAR SHAREHOLDERS

The Risk Management Committee of WHA Utilities and Power Public Company Limited consists of the following four knowledgeable, competent, experienced members with mastery of the Company's business as its members:

1. Miss Jareeporn Jarukornsakul

Chairman of the Risk Management Committee

2. Mr. David Richard Nardone

Risk Management Committee member

3. Mr. Surathian Chakthranont

Risk Management Committee member

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 (the Board) 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 2019, TWO MEETINGS WERE HELD BY THE COMMITTEE AS PLANNED WITH THE HIGHLIGHTS OF PERFORMANCE ARE AS FOLLOWS:

1. Endorsed key projects for the Board's consideration, e.g., the additional terms and conditions of Transaction Agreements of Utility Project in Vietnam;
2. Defined corporate risks and revised the Corporate Risk Management Policy together with plans and risk appetites

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

CORPORATE GOVERNANCE COMMITTEE REPORT

DEAR SHAREHOLDERS

The Corporate Governance Committee of WHA Utilities and Power Public Company Limited consists of three knowledgeable directors as its members:

1. Mrs. Punnee Worawuthichongsathit

Chairman of the Corporate Governance Committee

2. Mr. Ekajai Tivutanond

Corporate Governance Committee member

3. Mr. Vivat Jiratikarnsakul

Corporate Governance Committee member

The Board has assigned the committee to propose 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.

IN 2019, TWO MEETINGS WERE HELD BY THE COMMITTEE AS PLANNED WITH THE OBJECTIVES TO TRACK, ASSESS AND REVIEW CG AND ANTI-CORRUPTION TASKS, AS HIGHLIGHTED BELOW:

1. DEFINING, DEVELOPING, AND IMPROVING CORPORATE GOVERNANCE POLICIES AND GUIDELINES IN ACCORDANCE WITH LAWS, REGULATIONS, AND BEST PRACTICES

- 1.1 Endorsing and providing recommendations on the plan of 2019 Annual General Meeting of Shareholders (AGM), which was successfully held under the good Corporate Governance principles, and complied to SET's AGM checklists with the Company receiving a full score.

2. SUPERVISING, PROMOTING, AND MONITORING TO ENSURE COMPLIANCE WITH CORPORATE GOVERNANCE POLICY, ANTI-CORRUPTION POLICY, AND CODE OF CONDUCT

- 2.1 Endorsing and providing recommendations on the Company's 2019 development plan of Corporate Governance, Code of Conduct, Anti-Corruption, and fair treatment of stakeholders with the focus on relentlessly improving methods to implant corporate governance and the code of conduct as corporate culture for the Company's staff. The committee also constantly encourages the monitoring of legislation and corporate governance measures for the Company's adaptation, while promoting fair and equitable treatment for stakeholders and providing key recommendations for efficiently developing good corporate governance principles and code of conduct guidelines.

- 2.2 Advocating to the Company's declaration to join CAC and run their operations with transparency and Anti-Corruption of all forms.

3. SUPPORTING AND ADVISING THE COMPANY TO UNDERTAKE CORPORATE GOVERNANCE ASSESSMENT

- 3.1 Reviewing the assessment results of the Corporate Governance Report of Thai Listed Companies Project (CGR) as well as advising on amendment and development of guidelines in line with the criteria and recommendations from such assessment.

With the firm intention to conform to corporate governance, and CSR, the Company earned an "Excellent" score (90-100 marks) or the "Five-Star Symbol" from the Corporate Governance Reports of Thai Listed Companies (CGR) assessment for 2019 conducted by Thai Institute of Directors Association (IOD).

The Corporate Governance Committee remains committed to improve its efficiency in steering the Company's CG, and social responsibility to align with the Company's business strategies for the best interests of all stakeholders and greater international acceptance.



Mrs. Punnee Worawuthichongsathit

Chairman of the Corporate Governance Committee

NOMINATION AND REMUNERATION COMMITTEE REPORT

DEAR SHAREHOLDERS

The Nomination and Remuneration Committee of WHA Utilities and Power Public Company Limited consists of three knowledgeable directors as its members:

1. Mr. Weidt Nuchjalearn

Chairman of the Nomination and Remuneration Committee

2. Miss Jareeporn Jarukornsakul

Nomination and Remuneration Committee member

3. Mr. Ekajai Tivutanond

Nomination and Remuneration Committee member

In accordance with the stated process, the committee nominates individuals whose qualifications meet the indicated criteria to be appointed as directors, Chief Executive Officer (CEO), and Board-Committee members. It also reviews the forms and criteria for directors' remuneration before tabling to the Board for endorsement and to shareholders for approval respectively.

IN 2019, FIVE MEETINGS WERE HELD BY THE COMMITTEE WITH THE HIGHLIGHTS OF PERFORMANCE ARE AS FOLLOWS:

1. Nominated and selected experts for directors' appointment in line with the stated processes and criteria before tabling to the Board or shareholders for approval as required by law. To this end, the consideration was considered in conjunction with both overall and individual qualifications of the Board to match the Company's size, nature, and business diversity. The committee scrutinized qualifications including education, knowledge, expertise, skills, experience, specialized competencies related to the Company's businesses, and independence as defined by corporate criteria;
2. Nominated and selected qualified candidate(s) in replacement of directors who resigned before term completion, as well as members of Board-Committee, namely the Executive Committee, the Nomination and Remuneration Committee, the Audit Committee, the Corporate Governance Committee, and the Risk Management Committee, before tabling to the Board for the consideration and approval of the appointment to fill the vacancies upon directors' resignation or term completion;
3. Reviewed the Board's 2019 remuneration by benchmarking with peer companies of the same industry to ensure its suitability with Directors' responsibilities and in accordance with the Company's overall performance. The proposal of which was endorsed by the Board and later approved by the shareholders in the Annual General Meeting of Shareholders (AGM);

4. Assessed the CEO's performance before tabling to the Board for the consideration of salary adjustment;
5. Encouraged minor shareholders to propose agenda items and nominate directors for election by announcing to shareholders at least three months before the 2019 AGM, from 12 November 2018 to 12 January 2019.

Moreover, the Nomination and Remuneration Committee also provided views and recommendations to the Management with regard to human resources management to foster the morale and retention of highly capable employees with the Company.



Mr. Weidt Nuchjalearn

Chairman of the Nomination and
Remuneration Committee

AUDIT COMMITTEE REPORT

DEAR SHAREHOLDERS

The Audit Committee of WHA Utilities and Power Public Company Limited consists of three knowledgeable independent non-executive directors as its members:

1. Mr. Weidt Nuchjalearn

Chairman of the Audit Committee

2. Mr. Ekajai Tivutanond

Audit Committee member

3. Mrs. Punnee Worawuthichongsathit

Audit Committee member

The Audit Committee members are qualified in accordance with the rules and regulations for Audit Committees, as issued by the Securities and Exchange Commission and the Stock Exchange of Thailand. The Audit Committee has fulfilled its responsibilities according to the scope and duties assigned by the Board of Directors in compliance with its Charter and official regulations.

Six formal Audit Committee meeting were held in respect of its 2019 financial year duties. By invitation, such meeting was also attended by the internal and external auditors, as well as by members of the company management, inclusive of the Chief Financial Officer, with occasional participations by the Chief Executive Officer upon requests. Moreover, the Audit Committee also arranged time to meet the internal and external auditors without executives of the Company being present. The meeting was officially arranged quarterly, in case informal consultations added as deemed necessary.

THE ACTIVITIES OF THE AUDIT COMMITTEE COVERED THE FOLLOWING AREAS:

1. Review of the interim and annual financial statements of 2019 to verify that the statements were accurate and complete, and that relevant supporting financial information was disclosed. The review was conducted with inputs from the management and the external auditors. The Audit Committee and external auditors agreed that the financial statements were correct with financial reporting standards. The Company had diligently applied itself to the Federation of Accounting Professionals of Thailand's revised sets of accounting standards, which had been introduced in conjunction with international practice.
2. Review of the internal and risk management control system in order to verify that the system was appropriate and effective in meeting its objectives. The review which was conducted with inputs from the internal auditors, coupled with discussions with the external auditors, did not reveal any significant weaknesses or deficiencies, either at company or subsidiary level. The Audit Committee and both the internal and external auditors are of the view that the prevailing internal control and risk management system meet the requirements of the SET and SEC, and is adequate to safeguard assets and provide sufficient disclosure of information.

3. Review of the internal audit function to ensure its effectiveness and independence. The internal audit function is conducted by a reputable and independent internal audit firm. Work is performed in accordance with a program jointly studied and approved on a continuing basis by the Audit Committee, together with the Management. The internal auditors report their findings to both the Audit Committee and the Management on a quarterly basis, with open access to the Audit Committee at all times. The Audit Committee believes that the internal audit functions of the Company and subsidiaries are appropriate, effective and independent.
4. Review of compliance with the Securities and Exchange Acts, other relevant laws and SEC-SET regulations, as well as the Company's own rules and obligations to external parties. This review, which was performed by the Audit Committee members, with contracted assistance from the internal auditors, did not find any significant instances of non-compliance.
5. Review of, and giving opinion on, connected transactions and transactions potentially giving rise to conflicts of interest, together with the aspect of information disclosure on such transactions in compliance with the regulations of the SET and SEC. The Audit Committee and both the internal and external auditors were of the opinion that such transactions had fully and appropriately been disclosed in the financial statements and notes thereto, and were reasonable, of a normal business nature, as well as being beneficial to the Company.
6. Considering the appointment of external auditors and their remunerations for the year 2020. The Audit Committee recommending such to the Board of Directors for submission to the Shareholders' Annual General Meeting for the next year. Having considered for performance, independence and remuneration issues, the Audit Committee was satisfied with audit personnel of the present external audit firm, PricewaterhouseCoopers ABAS Ltd., on all count. The committee thus recommended Mr.Chanchai Chaiprasit (Certified Public Accountant registration number 3760), Mr.Paiboon Tunkoon (Certified Public Accountant registration number 4298), and Mr. Boonrueng Lerdwiseswit (Certified Public Accountant registration number 6552) to appointed the Company's external auditor for the year 2020 at a remuneration of Baht 2,899,570 and other expenses as relevant to the audit according to the appropriation.

The external auditors had no family, financial interest, employment, investment or business relationship with the Company or any of its subsidiaries, other than in the normal course of audit business.

In summary, the Audit Committee, in the course of discharging its Chartered responsibilities as assigned by the Board of Directors, found that the Company had presented its financial and operational information in a true and fair manner, had appropriate and effective internal control and audit and risk management, had complied with laws, regulations and obligations, and had disclosed connected transactions correctly



Mr. Weidt Nuchjalearn
Chairman of the Audit Committee

INDEPENDENT
AUDITOR'S REPORT
AND **FINANCIAL
STATEMENT**



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 of WHA Utilities and Power Public Company Limited (the Company) and its subsidiaries (the Group) and the separate financial statements of the Company present fairly, in all material respects, the consolidated and separate financial position of the Group and of the Company as at 31 December 2019, 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 (TFRSs).

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 2019;
- 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 a summary of significant accounting policies.

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 Federation of Accounting Professions under the Royal Patronage of his Majesty the King's Code of Ethics for Professional Accountants together with the ethical requirements that are relevant to my audit of the consolidated and separate financial statements, and I have fulfilled my other ethical responsibilities in accordance with these requirements. I believe that the audit evidence I have obtained is sufficient and appropriate to provide a basis for my opinion.

My audit approach - overview



Materiality

Overall group materiality: Baht 108 million which represents 5% of Group's profit before tax.

Audit scope

I conduct with audit work of the consolidated financial statements by focusing on the significant components which account for 76% of the Group's profit before tax and 81% of the Group's total assets.

Key audit matters

I identified Goodwill impairment assessment as key audit matter.

Materiality

The scope of my audit was influenced by my application of materiality. An audit is designed to obtain reasonable assurance whether the financial statements are free from material misstatement. Misstatements may arise due to fraud or error. They are considered material if individually or in aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of the consolidated financial statements.

Based on my professional judgement, I determined certain quantitative thresholds for overall materiality for the consolidated financial statements as set out in the table below. These, together with qualitative considerations, helped me to determine the scope of my audit and the nature, timing and extent of my audit procedures and to evaluate the effect of misstatements, both individually and in aggregate on the financial statements as a whole.

Overall materiality for consolidated financial statements	Baht 108 million
How I determined it	5% of Group's profit before tax
Rationale for the materiality benchmark applied	I chose profit before tax as the critical measure because, in my view, it is the measure against the performance of the Company. The 5% benchmark is a generally accepted auditing practice and there were no significant unusual elements that merited adjustments to this benchmark.

I agreed with the audit committee that I would report to them any misstatements identified during my audit.

My audit scope

I tailored the scope of my audit in order to perform sufficient work to enable me to provide an opinion on the Group's consolidated financial statements as a whole, taking into account the structure of the Group, the accounting processes and controls, and the industry in which the Group operates.

Key audit matters

Key audit matters are those matters that, in my professional judgment, were of most significance in my audit of the consolidated and separate financial statements of the current period. I determine one key audit matter which was Goodwill impairment assessment. The matter was 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 the matter.

Key audit matter	How my audit addressed the key audit matter
<p>Goodwill impairment assessment</p> <p>Refer to Note 2.12 - Accounting policy of impairment of assets and Note 13 - Goodwill, as at 31 December 2019, the Group has goodwill of Baht 2,773 million arose from the past acquisition of power and water businesses.</p> <p>The Group tests goodwill acquired in a business combination for impairment annually irrespective of whether there is any indication of impairment as required by TAS 36 Impairment of assets.</p> <p>I focused on this matter because management uses judgement and estimates about the future to determine the recoverable amount of cash-generating units that include goodwill.</p> <p>The recoverable amount is based on fair value less costs of disposal determined using a present value technique. The key assumptions used for forecasting the expected net future discounted cash flow to net present value are the gross margin, growth rate and discount rate.</p> <p>The management concluded that there is no impairment of goodwill because the recoverable amount is higher than the carrying amount.</p>	<p>My key audit procedures comprised:</p> <ul style="list-style-type: none">- obtaining, understanding and evaluating management's cash flow forecasts and processes by which the forecasts were developed,- challenging the reasonableness of management's key assumptions, such as future business plan, the forecasted future gross margin, growth rate and discount rates using the weighted average cost of capital (WACC), taking into account the sensitivity of the changes in the goodwill balance in the respective assumptions,- testing the mathematical accuracy of key figures estimated based on the above assumptions and used them to calculate the recoverable amount and compare to the carrying amount, and- comparing the cash flow forecast to the approved budgets and business plans and other evidence from the management to support the forecasted business plan <p>Based on the audits, I found that the assessment of the impairment of goodwill was reasonable, and consistent with the supporting evidence.</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 TFRSs, and for such internal control as the directors determine is necessary to enable the preparation of the 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 judgment 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
 28 February 2020

STATEMENT OF FINANCIAL POSITION

WHA UTILITIES AND POWER PUBLIC COMPANY LIMITED
AS AT 31 DECEMBER 2019

	Notes	Consolidated financial statements		Separate financial statements	
		2019 Baht	2018 Baht	2019 Baht	2018 Baht
Assets					
Current assets					
Cash and cash equivalents	7	754,591,304	853,462,295	541,569,322	193,512,708
Trade and other receivables, net	8	811,378,643	269,072,721	277,486,695	203,677,504
Short-term loans to related parties	28	283,490,552	754,550,500	5,029,490,000	2,653,440,000
Other current assets		224,806,825	196,512,518	152,134,369	183,772,866
Total current assets		2,074,267,324	2,073,598,034	6,000,680,386	3,234,403,078
Non-current assets					
Investments in associates	9.1	14,587,636,917	12,630,879,987	-	-
Investments in subsidiaries	9.2	-	-	9,324,499,944	9,324,499,944
Interests in joint ventures	9.1	737,554,465	724,116,727	158,900,000	132,825,000
Other long-term investment, net		253,557,521	267,430,208	-	-
Building and equipments, net	10	3,950,235,348	3,214,316,337	2,804,749,720	2,837,113,740
Right to operate and distribute industrial water, net	11	117,306,279	125,998,279	117,306,279	125,998,279
Intangible assets, net	12	1,918,164,164	1,955,670,616	1,874,550,111	1,955,670,616
Goodwill	13	2,772,877,526	2,772,877,526	597,693,413	610,669,873
Deferred tax assets	14	154,004	-	-	-
Other non-current assets		6,963,882	8,378,134	6,963,882	8,378,134
Total non-current assets		24,344,450,106	21,699,667,814	14,884,663,349	14,995,155,586
Total assets		26,418,717,430	23,773,265,848	20,885,343,735	18,229,558,664

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

STATEMENT OF FINANCIAL POSITION (CONTINUED)

WHA UTILITIES AND POWER PUBLIC COMPANY LIMITED
AS AT 31 DECEMBER 2019

	Notes	Consolidated financial statements		Separate financial statements	
		2019 Baht	2018 Baht	2019 Baht	2018 Baht
Liabilities and equity					
Current liabilities					
Trade and other payables	15	292,213,975	189,718,918	194,633,354	171,542,031
Short-term borrowings from financial institutions	16	1,765,000,000	-	1,765,000,000	-
Current portion of long-term borrowings from financial institution	16	124,729,533	-	124,729,533	-
Current portion of debentures	16	3,998,377,529	-	3,998,377,529	-
Accrued income tax		29,983,988	26,289,179	-	-
Contingent consideration from business acquisition	9.1	242,915,209	-	-	-
Other current liabilities		28,452,287	18,145,275	21,541,148	12,711,105
Total current liabilities		6,481,672,521	234,153,372	6,104,281,564	184,253,136
Non-current liabilities					
Long-term borrowings from financial institution	16	874,343,972	-	874,343,972	-
Debentures	16	4,994,265,166	8,987,977,050	4,994,265,166	8,987,977,050
Deferred tax liabilities	14	122,793,288	139,996,107	93,301,174	115,010,067
Provision for liabilities from water business	17	340,466,383	331,571,745	332,485,373	331,571,745
Employee benefit obligations	18	18,838,462	17,039,449	18,838,462	17,039,449
Other non-current liabilities		27,070,351	13,258,261	15,590,508	12,481,132
Total non-current liabilities		6,377,777,622	9,489,842,612	6,328,824,655	9,464,079,443
Total liabilities		12,859,450,143	9,723,995,984	12,433,106,219	9,648,332,579

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

STATEMENT OF FINANCIAL POSITION (CONTINUED)

WHA UTILITIES AND POWER PUBLIC COMPANY LIMITED
AS AT 31 DECEMBER 2019

	Note	Consolidated financial statements		Separate financial statements	
		2019 Baht	2018 Baht	2019 Baht	2018 Baht
Liabilities and equity					
Equity					
Share capital					
Authorised share capital					
Ordinary shares 3,825,000,000 shares at a par value of 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 at paid-up at 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	20	164,386,579	112,766,796	164,386,579	112,766,796
Unappropriated		3,491,991,192	4,000,462,005	627,094,013	809,118,127
Other components of equity		3,520,048,146	3,553,199,697	1,277,915,676	1,276,499,914
Equity attributable to the owners of the parent		13,559,267,165	14,049,269,746	8,452,237,516	8,581,226,085
Non-controlling interests		122	118	-	-
Total equity		13,559,267,287	14,049,269,864	8,452,237,516	8,581,226,085
Total liabilities and equity		26,418,717,430	23,773,265,848	20,885,343,735	18,229,558,664

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

STATEMENT OF COMPREHENSIVE INCOME

WHA UTILITIES AND POWER PUBLIC COMPANY LIMITED
FOR THE YEAR ENDED 31 DECEMBER 2019

	Notes	Consolidated financial statements		Separate financial statements	
		2019	2018	2019	2018
		Baht	Baht	Baht	Baht
Revenue from sales		1,639,778,843	1,523,103,410	1,305,298,758	1,242,502,192
Revenue from services		217,469,003	185,181,597	261,357,638	201,213,130
Total revenues		1,857,247,846	1,708,285,007	1,566,656,396	1,443,715,322
Cost of sales		(1,014,792,686)	(978,706,595)	(957,595,384)	(928,368,649)
Cost of services		(149,614,420)	(141,299,697)	(143,332,680)	(140,010,058)
Total costs		(1,164,407,106)	(1,120,006,292)	(1,100,928,064)	(1,068,378,707)
Gross profit		692,840,740	588,278,715	465,728,332	375,336,615
Other income	21	145,671,434	162,696,044	1,054,117,435	889,726,255
Administrative expenses		(197,548,033)	(130,842,791)	(166,161,717)	(120,019,989)
Finance costs	22	(342,024,905)	(366,555,240)	(337,735,184)	(358,164,858)
Share of profit from investments in associates and interests in joint ventures	9.1	1,881,117,658	2,047,414,903	-	-
Profit before income tax expenses		2,180,056,894	2,300,991,631	1,015,948,866	786,878,023
Income tax (expense) benefit	24	(42,847,843)	(49,093,768)	16,446,803	6,447,074
Profit for the year		2,137,209,051	2,251,897,863	1,032,395,669	793,325,097
Other comprehensive income:					
Items that will not be reclassified to profit or loss					
Remeasurements of retirement benefit obligations	18	1,769,703	-	1,769,703	-
Income tax on items that will not be reclassified to profit or loss	14	(353,941)	-	(353,941)	-
Total items that will not be reclassified to profit or loss		1,415,762	-	1,415,762	-
Items that will be reclassified subsequently to profit or loss					
Exchange rate difference on translation of the financial statements of subsidiaries		(22,148,436)	(423,012)	-	-
Share of other comprehensive income of associates and joint ventures accounted for under the equity method	9.1	(12,418,877)	(1,177,960)	-	-
Total items that will be reclassified subsequently to profit or loss		(34,567,313)	(1,600,972)	-	-
Other comprehensive income for the year, net of tax		(33,151,551)	(1,600,972)	1,415,762	-
Total comprehensive income for the year		2,104,057,500	2,250,296,891	1,033,811,431	793,325,097
Profit attributable to					
Owners of the parent		2,137,209,022	2,251,897,827	1,032,395,669	793,325,097
Non-controlling interests	29	36	-	-	-
Profit for the year		2,137,209,051	2,251,897,863	1,032,395,669	793,325,097
Total comprehensive income attributable to					
Owners of the parent		2,104,057,471	2,250,296,855	1,033,811,431	793,325,097
Non-controlling interests	29	36	-	-	-
Total comprehensive income for the year		2,104,057,500	2,250,296,891	1,033,811,431	793,325,097
Earnings per share					
Basic earnings per share	25	0.56	0.59	0.27	0.21

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

STATEMENT OF CHANGES IN EQUITY

WHA UTILITIES AND POWER PUBLIC COMPANY LIMITED
FOR THE YEAR ENDED 31 DECEMBER 2019

Consolidated financial statements												
Attributable to the owners of the parent												
Notes	Retained earnings				Other components of equity						Other non-controlling interests	Total equity
	Issued and paid-up share capital	Share premium on ordinary shares	Appropriated - legal reserve	Unappropriated	Surplus arising from business combination under common control	Other comprehensive income						
						Exchange rate differences on translation of the financial statements of subsidiaries	Gain (loss) on remeasurement of defined employee benefit plans	Share of other comprehensive expense of joint ventures	Total owner of the parent			
	Baht	Baht	Baht	Baht	Baht	Baht	Baht	Baht	Baht	Baht	Baht	Baht
Beginning balance as at 1 January 2018	3,825,000,000	2,557,841,248	73,100,541	2,566,235,433	3,576,558,531	-	(1,864,616)	(19,893,246)	12,576,977,891	73	12,576,977,964	
Dividend paid	19	-	-	(778,005,000)	-	-	-	-	(778,005,000)	-	(778,005,000)	
Legal reserve	20	-	-	39,666,255	(39,666,255)	-	-	-	-	-	-	
Dividend from a subsidiary paid to non-controlling interests		-	-	-	-	-	-	-	-	(36)	(36)	
Issuance of ordinary shares in subsidiary		-	-	-	-	-	-	-	-	45	45	
Total comprehensive income for the year		-	-	2,251,897,827	-	(423,012)	-	(1,177,960)	2,250,296,855	36	2,250,296,891	
Ending balance as at 31 December 2018		3,825,000,000	2,557,841,248	112,766,796	4,000,462,005	3,576,558,531	(423,012)	(1,864,616)	(21,071,206)	14,049,269,746	118	14,049,269,864
Beginning balance as at 1 January 2019		3,825,000,000	2,557,841,248	112,766,796	4,000,462,005	3,576,558,531	(423,012)	(1,864,616)	(21,071,206)	14,049,269,746	118	14,049,269,864
Retrospective adjustments from changes in accounting policy	2.2	-	-	-	(1,431,260,052)	-	-	-	-	(1,431,260,052)	-	(1,431,260,052)
Dividend paid	19	-	-	-	(1,162,800,000)	-	-	-	-	(1,162,800,000)	-	(1,162,800,000)
Legal reserve	20	-	-	51,619,783	(51,619,783)	-	-	-	-	-	-	-
Dividend from a subsidiary paid to non-controlling interests		-	-	-	-	-	-	-	-	-	(40)	(40)
Issuance of ordinary shares in subsidiary		-	-	-	-	-	-	-	-	-	15	15
Total comprehensive income for the year		-	-	-	2,137,209,022	-	(22,148,436)	1,415,762	(12,418,877)	2,104,057,471	29	2,104,057,500
Ending balance as at 31 December 2019		3,825,000,000	2,557,841,248	164,386,579	3,491,991,192	3,576,558,531	(22,571,448)	(448,854)	(33,490,083)	13,559,267,165	122	13,559,267,287

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

STATEMENT OF CHANGES IN EQUITY (CONTINUED)

WHA UTILITIES AND POWER PUBLIC COMPANY LIMITED
FOR THE YEAR ENDED 31 DECEMBER 2019

Separate financial statements								
						Other components of equity		
						Other comprehensive income		
						Loss on remeasurement of defined employee benefit plans		Total equity
						Surplus arising from business combination under common control		
Notes	Issued and paid-up share capital Baht	Share premium on ordinary shares Baht	Appropriated - legal reserve Baht	Unappropriated Baht		Baht	Baht	Baht
Beginning balance as at 1 January 2018	3,825,000,000	2,557,841,248	73,100,541	833,464,285		1,278,364,530	(1,864,616)	8,565,905,988
Dividend paid	19	-	-	(778,005,000)		-	-	(778,005,000)
Legal reserve	20	-	-	39,666,255	(39,666,255)	-	-	-
Total comprehensive income for the year		-	-	-	793,325,097	-	-	793,325,097
Ending balance as at 31 December 2018		3,825,000,000	2,557,841,248	112,766,796	809,118,127	1,278,364,530	(1,864,616)	8,581,226,085
Beginning balance as at 1 January 2019		3,825,000,000	2,557,841,248	112,766,796	809,118,127	1,278,364,530	(1,864,616)	8,581,226,085
Dividend paid	19	-	-	-	(1,162,800,000)	-	-	(1,162,800,000)
Legal reserve	20	-	-	51,619,783	(51,619,783)	-	-	-
Total comprehensive income for the year		-	-	-	1,032,395,669	-	1,415,762	1,033,811,431
Ending balance as at 31 December 2019		3,825,000,000	2,557,841,248	164,386,579	627,094,013	1,278,364,530	(448,854)	8,452,237,516

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

STATEMENT OF CASH FLOWS

WHA UTILITIES AND POWER PUBLIC COMPANY LIMITED
FOR THE YEAR ENDED 31 DECEMBER 2019

	Notes	Consolidated financial statements		Separate financial statements	
		2019	2018	2019	2018
		Baht	Baht	Baht	Baht
Cash flows from operating activities					
Profit before income tax		2,180,056,894	2,300,991,631	1,015,948,866	786,878,023
Adjustments of					
(Reversal of) allowance for doubtful accounts		815,622	(16,837,544)	815,622	(8,491,544)
Share of profit from investments in associates and interests joint ventures	9.1	(1,881,117,658)	(2,047,414,903)	-	-
Gain on sales of interests in joint ventures		(922,760)	(567,306)	(922,759)	(288,666)
Gain from disposal of equipments		(645,422)	-	(78,716)	-
Depreciation	10	157,995,675	143,464,032	139,769,935	133,447,432
Amortisation of right to operate and distribute industrial water	11	8,692,000	8,692,000	8,692,000	8,692,000
Amortisation of intangible assets	12	38,251,452	37,736,194	38,251,452	37,736,194
Amortisation of other long-term investments		13,872,687	13,872,687	-	-
Employee benefit obligations	18	3,568,716	6,053,103	3,568,716	6,053,103
Dividend income		(74,983,505)	(74,983,505)	(921,322,161)	(804,281,964)
Interest income		(47,948,721)	(57,565,057)	(131,789,193)	(81,050,534)
Finance costs	22	342,024,905	366,555,240	337,735,184	358,164,858
		739,659,885	679,996,572	490,668,946	436,858,902
Changes in operating assets and liabilities					
Trade and other receivables, net		(9,926,649)	13,217,913	(32,175,756)	32,375,994
Other current assets		(22,527,128)	28,084,068	36,735,750	30,863,911
Intangible assets, net		-	-	43,614,053	-
Goodwill		-	-	12,976,460	-
Other non-current assets		1,414,252	(2,193,951)	1,414,252	(2,193,951)
Trade and other payables		10,906,595	3,385,682	7,848,585	4,183,851
Other current liabilities		10,307,012	(4,905,649)	8,830,043	(2,481,052)
Provision for liabilities from water business	17	(23,629,923)	(8,558,736)	(30,840,915)	(8,558,736)
Other non-current liabilities		13,812,090	(6,792,595)	3,109,376	(3,372,338)
Cash generated from operating activities		720,016,134	702,233,304	542,180,794	487,676,581
Interest paid		(292,547,672)	(363,292,838)	(289,027,968)	(354,902,456)
Dividends received from operating activities		728,759,889	456,946,840	-	-
Cash paid for corporate income tax		(62,630,962)	(65,009,442)	(10,713,285)	(7,767,447)
Net cash generated from operating activities		1,093,597,389	730,877,864	242,439,541	125,006,678

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

STATEMENT OF CASH FLOWS (CONTINUED)

WHA UTILITIES AND POWER PUBLIC COMPANY LIMITED
FOR THE YEAR ENDED 31 DECEMBER 2019

	Notes	Consolidated financial statements		Separate financial statements	
		2019	2018	2019	2018
		Baht	Baht	Baht	Baht
Cash flows from investing activities					
Cash paid for the acquisition of available-for-sale investments		(650,000,000)	(530,000,000)	(650,000,000)	(300,000,000)
Cash received from the disposal of available-for-sale investments		650,922,759	530,567,306	650,922,759	300,288,666
Repayments of short-term loans to related parties	28	(230,490,552)	(53,000,000)	(4,137,490,000)	(1,217,000,000)
Cash received from short-term loans to related parties	28	701,550,500	312,214,500	1,761,440,000	119,575,000
Cash paid for the acquisition of investments in associates		(2,525,362,094)	(432,422,900)	-	-
Cash paid for the acquisition of investments in subsidiaries	9.2	-	-	-	(33,749,989)
Cash paid for the acquisition of interests in joint ventures	9.1	(26,075,008)	(320,577,500)	(26,075,000)	(126,577,500)
Interest received		47,590,310	57,925,599	89,340,135	75,335,025
Dividends from investing activities		74,983,505	74,983,505	921,322,161	804,281,964
Purchases of building and equipments		(818,340,820)	(320,643,545)	(104,595,068)	(164,739,403)
Cash received from disposal of equipments		4,374,176	-	224,766	-
Purchases of Intangible assets	12	(745,000)	(1,639,000)	(745,000)	(1,639,000)
Net cash used in investing activities		(2,771,592,224)	(682,592,035)	(1,495,655,247)	(544,225,237)
Cash flows from financing activities					
Proceeds from short-term borrowings from financial institutions		2,891,000,000	1,000,000,000	2,891,000,000	1,000,000,000
Repayment of short-term borrowings from financial institutions		(1,126,000,000)	(1,000,000,000)	(1,126,000,000)	(1,000,000,000)
Proceeds from long-term borrowing from financial institutions	16	1,000,000,000	-	1,000,000,000	-
Repayment of long-term borrowings from financial institution	16	-	(3,999,000,000)	-	(3,999,000,000)
Proceeds from debentures issuance	16	-	5,000,000,000	-	5,000,000,000
Cash paid for issuing cost of long-term borrowings from financial institutions	16	(1,000,000)	-	(1,000,000)	-
Cash paid for issuing debentures	16	-	(8,969,489)	-	(8,969,489)
Dividend paid to shareholders	19	(1,162,727,680)	(777,997,581)	(1,162,727,680)	(777,997,581)
Dividend paid from a subsidiaries to non-controlling interests		(40)	(36)	-	-
Net cash generated from financing activities		1,601,272,280	214,032,894	1,601,272,320	214,032,930

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

STATEMENT OF CASH FLOWS (CONTINUED)

WHA UTILITIES AND POWER PUBLIC COMPANY LIMITED
FOR THE YEAR ENDED 31 DECEMBER 2019

	Consolidated financial statements		Separate financial statements	
	2019	2018	2019	2018
	Baht	Baht	Baht	Baht
Net increase in cash and cash equivalents	(76,722,555)	262,318,723	348,056,614	(205,185,629)
Cash and cash equivalents - beginning balance	853,462,295	591,566,584	193,512,708	398,698,337
Exchange rate differences on translation of the financial statements of subsidiaries	(22,148,436)	(423,012)	-	-
Cash and cash equivalents - ending balance	754,591,304	853,462,295	541,569,322	193,512,708
Non-cash transactions				
Significant non-cash transactions for the year ended 31 December are as follows:				
1) Payables for purchases of buildings and equipment	95,550,043	16,247,423	6,266,975	3,310,078
2) Contingent consideration from business acquisition	242,915,209	-	-	-

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

NOTES TO THE CONSOLIDATED AND SEPARATE FINANCIAL STATEMENT

WHA UTILITIES AND POWER PUBLIC COMPANY LIMITED
FOR THE YEAR ENDED 31 DECEMBER 2019

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 domiciled in Thailand. The address of the Company's registered office is as follows:

The Company's head office is located at 24th floor, UM Tower, 9/241-242 Ramkhamhaeng Road, Suanluang subdistrict, Suanluang district, Bangkok, Thailand 10250.

For reporting purposes, the Company and its subsidiaries are referred to as "the Group".

The Group's major business 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.

The consolidated and separate financial statements have been authorised for issue by the Board of Director on 28 February 2020.

2 Accounting policies

The principal accounting policies applied in the preparation of these consolidated and separate financial statements are set out below:

2.1 Basis for 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 4.

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.

2.2 New and amended financial reporting standards that are relevant and have significant impacts to the Group

Thai Financial Reporting Standard No.15 (TFRS 15), Revenue from contracts with customers

The standard provides principle and approach of revenue recognition under five-step process. The underlying principle is that the Group will recognise revenue to depict the transfer of goods or services to customers at an amount that the entity expects to be entitled to in exchange for those goods or services. It replaces the principles of transferring the significant risks and rewards of ownership of the goods or services to the buyer in accordance with with TAS 11, Construction contracts, TAS 18, Revenue and related interpretations.

The Group has adopted the new TFRS 15, Revenue from contracts with customers from 1 January 2019 under the modified retrospective approach and the comparative figures have not been restated. The Group did apply practical expedient relates to completed contracts and contract modifications allowed by TFRS 15.

The adoption of TFRS 15 mainly affects the Group's accounting treatment on revenue recognition of availability payments of an associate. Revenue will be recognised when rendering services to customers according to the agreements.

The following tables show the adjustments made to the amounts recognised in each financial statement line item upon adoption of TFRS 15.

	Consolidated financial statements		
	As at 31 December 2018 Previously reported	Adjustments	As at 1 January 2019 Restated
Statement of financial position			
Investments in associates	12,630,879,987	(1,431,260,052)	11,199,619,935
Retained earnings	4,000,462,005	(1,431,260,052)	2,569,201,953

The following tables show the amounts by each financial information line item in the current year from the adoption of the TFRS 15 compared to the previous revenue standards.

	Consolidated financial statements		
	Balance as reported	Impacts from TFRS 15	Balance under the previous revenue standards
Statements of financial position as at 31 December 2019			
Investment in associates	14,587,636,917	1,689,528,413	16,277,165,330
Retained earnings	3,491,991,192	1,689,528,413	5,181,519,605
Statements of comprehensive income for the year ended 31 December 2019			
Share of profit of associates and joint ventures	1,881,117,658	258,268,361	2,139,386,019

The Group has not yet early adopted the new and revised financial reporting standards, which is effective on 1 January 2020. The Group's management is currently assessing the impact of adoption of these standards.

2.3 Principles of consolidation 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.

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.

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. Interests 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.

Accounting under equity method

The investment is initially recognised at cost which is a consideration paid and costs directly attributable to the purchase of investment.

The Group's subsequently shares of its associates and joint ventures' profits or losses and other comprehensive income in the profit or loss and 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 at the acquisition date. 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 paid under business combination under common control and the acquirer's interests in the carrying value of the acquiree is presented as "surplus arising from business combination under common control" in equity and is derecognised when the investment is disposed of transferred to retained earnings.

2.4 Foreign currency translation

Functional and presentation currency

The financial statements are presented in Thai Baht, which is the Company's and the Group'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 foreign currency transactions of monetary assets and liabilities are recognised in the profit or loss.

Any exchange component of gains and losses on a non-monetary item that recognised in profit or loss, or other comprehensive income is recognised following the recognition of a gain or loss on the non-monetary item.

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.

2.5 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 and bank overdrafts.

In the statements of financial position, bank overdrafts are shown in current liabilities.

2.6 Trade accounts receivable

Trade receivables are amounts due from customers for goods sold or service performed in the ordinary course of business.

Trade receivables are recognised initially at the amount of consideration that does not have payment condition. If receivables contain significant financing components, they are recognised at their present value. The Group recognises trade receivables at cost less allowance for doubtful accounts.

2.7 Long-term investments

Other long-term investments

Other long-term investments are carried at cost less impairment.

Investment are initially recognised at cost, which is equal to the fair value of consideration paid plus transaction cost.

Disposal of investments

On disposal of an investment, the difference between the net disposal proceeds and the carrying amount is charged or credited to the profit or loss. When disposing of part of the Company's holding of a particular investment in debt or equity securities, the carrying amount of the disposed part is determined by the weighted average carrying amount of the total holding of the investment.

2.8 Buildings and equipment

Building and equipment are stated at cost less any accumulated depreciation and impairment losses. Historical cost includes expenditure that is directly attributable to the acquisition of the items.

Subsequent costs are 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.

Depreciation on other assets is calculated using the straight-line method to allocate their cost to their residual values over their estimated useful lives, as follows:

	<u>Years</u>
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.

2.9 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, being the operating segments.

2.10 Intangible assets

Exclusive right

Exclusive right in sale of water to customers in the industrial estate, acquired on business combination, is recognised at fair value at the date of acquisition. Amortisation is reassessed annually for 50 years in each project. There will be no reassessment on the asset value, but will be adjusted if there is any indicator for impairment.

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.

2.11 Right to operate and distribute the industrial water

Right to operate and distribute the industrial water is carried at cost less accumulate amortisation and accumulated impairment losses (if any). This cost are amortised using the straight-line method over 25 years which is the period of the contractual rights.

2.12 Impairment of assets

Assets that have an indefinite useful life are tested annually for impairment, and more frequently if events or changes in circumstances indicate that it might be impaired. Assets that are subject to amortisation are reviewed for impairment whenever there are any indicators 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 other than goodwill is reversed.

2.13 Leases

Leases - where the Group is the lessee

Payments made under operating leases (net of any incentives received from the lessor) are charged to profit or loss on a straight-line basis over the period of the lease.

Leases - where the Group is the lessor

Rental income under operating leases (net of any incentives given to lessees) is recognised on a straight-line basis over the lease term.

2.14 Borrowings

Borrowings are recognised initially at the fair value, net of directly attributable transaction costs incurred. Borrowings are subsequently stated at amortised cost.

Fees paid on the establishment of loan facilities are recognised as transaction costs of the loan to the extent that it is probable that some or all of the facility will be drawn down. The fee is deferred until the drawn down occurs and included in effective interest calculation. However, if it is probable that facility will not be drawn down, that portion of the fee paid is recognised as a prepayment and amortised over the period of related facility.

Borrowings are removed from the statement of financial position when the obligation specified in the contract is discharged, cancelled, or expired. The difference between the carrying amount of a financial liability that has been extinguished or transferred to another party and the consideration paid, including any non-cash assets transferred or liabilities assumed, is recognised in profit or loss as finance costs.

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.

2.15 Current and deferred income taxes

The tax expense for the period 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 is not recognised
- 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 tax balances relate to the same tax authority. Current tax assets and tax liabilities are offset where the entity has a legally enforceable right to offset and intends either to settle on a net basis, or to realise the asset and settle the liability simultaneously.

2.16 Employee benefits

Short-term employee benefits

Liabilities for short-term employee benefits are expected to be settled 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 on a mandatory basis. 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 by the agreed benefits the employees will receive after the completion of employment. 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 annually 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 charged or credited 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.

2.17 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.

2.18 Share capital

Ordinary shares are classified as equity.

Incremental costs directly attributable to the issue of new shares or options (net of tax) are shown as a deduction in equity.

2.19 Revenue recognition

Revenue are recorded net of value added tax. They are recognised in accordance with the provision of goods or services, provided that collectability of the consideration is probable.

The Group recognises contracts that involve delivery or provision of multiple products or services separately based on each distinct performance obligation. 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 fulfilment of the obligation to the customers.

The Group recognises each type of revenue as follows:

Revenue under the sales of industrial water

Revenue under the 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 under the waste water treatment service

The Group recognises revenue under the waste water treatment service over the time when rendering services to customer according to the agreements. If the Group receives consideration above 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

The Group recognised rental income as revenue on a straight-line basis over the contract term, regardless of the payment pattern.

Interest income

Interest income is recognised on a time proportion basis, taking into account of the principal outstanding and the effective interest 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.

Contract assets and contract liabilities

A contract asset is recognised when the Group recorded revenue for fulfillment of a contractual performance obligation before the customer paid consideration or before the requirements for billing.

A contract liability is recognised when the customer paid consideration or a receivable from the customer that is due before the Group fulfilled a contractual performance obligation.

For each customer contract, contract liabilities is set off against contract assets.

Financing components

The Group does not expect to 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.

2.20 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 shareholders.

2.21 Segment reporting

The Group's principle business operations are water business, power business and holding company.

3 Financial risk management

3.1 Financial risk factors

The Group's activities are exposed to a variety of financial risks, such as impact of changes in market price risk (including currency risk and fair value risk), credit risk and liquidity risk. The Group's overall risk management programme focuses on managing the fluctuation of financial markets and seeks to minimise potential adverse effects on the Group's financial performance. The board of directors provides written principles for overall risk management which is carried out by a central treasury department (the Group treasury), including identification, evaluation and hedge of financial risks in close co-operation with operating units.

Foreign exchange risk

The Group has no significant exposure to foreign currency risk due to its accounts receivable and accounts payable are mainly in Thai Baht. The Company does not use any derivative financial instruments to hedge foreign currency exposure.

Liquidity risk

Liquidity risk is the risk that suitable sources of fund for the Group's business activities may not be available. The Group applies prudent liquidity risk management in which the Group maintains sufficient cash to use for its business activities. The Group's availability of fund is managed through an adequate amount of committed credit facilities provided to the Group.

Credit risk

The Group has no significant concentrations of credit risk. The Group has policies in place to ensure that contracts are made with customers who have an appropriate credit history, limiting customers' credit limit as well as obtaining appropriate guarantees from customers. Deposits counterparties are limited to high credit quality financial institutions. The Group has policies that limit the amount of credit exposure to any one financial institution.

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.

3.2 Fair value

Fair values are categorised into hierarchy based on inputs used as follows:

- Level 1: Quoted prices (unadjusted) in active markets for identical assets or liabilities.
- Level 2: Inputs other than quoted prices included within level 1 that are observable for the asset or liability, either directly (that is, as prices) or indirectly (that is, derived from prices).
- Level 3: Inputs for the asset or liability that are not based on observable market data (that is unobservable inputs).

4 Critical 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.

Goodwill impairment

The recoverable amounts of cash-generating units have been determined based on fair value less costs of disposal calculations. The calculations use cash flow projections based on financial budget approved by management covering a five-year period.

Cash flows beyond the five-year period are extrapolated using the estimated growth rates stated in note 13. These growth rates are consistent with forecasts included in industry reports specific to the industry in which each CGU operates.

Provision for liabilities from water business

The Group estimates the liabilities from water business according to the Strategic Partnership Agreement and Right Lease Agreement to operate the industrial water business and the waste water management business by determining the demand of sales and services, price and other relevant factors. The Group uses future cash flow that expect to pay under the agreement and discount rate which reflects the related risk.

Plant and equipment, and depreciation

In determining depreciation of plant and equipment, the management is required to make estimates of the useful life and residual values of plant and equipment and to review estimated useful life and residual values when there are any changes.

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 18.

Classification of joint arrangements

The Group holds over 50% of the voting right in joint arrangements. However, the Group concluded that it has joint control over the joint arrangement under the contractual agreement which requires unanimous consent from all parties to the joint arrangement. The Group and counterparties to the joint arrangement also, has rights to the net assets of the joint arrangements.

5 Capital management

The Group's objectives when managing capital are to safeguard the Group's ability to continue as a going concern in order to provide returns for shareholders and benefits for other stakeholders and to 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.

6 Segment information

The Group reported operating segments in a manner consistent with the internal reporting provided to the chief operating decision-maker. The chief operating decision-maker, who is responsible for allocating resources and assessing performance of the operating segments, has been identified as Board of Directors that makes strategic decisions.

The factors used to identify the Group's reportable segments include types of products and services. There are three reportable segments, (1) water business (2) power business and (3) holding company.

The Group's revenues between segments are carried out at arm's length. The revenue from external parties reported to the Board of Director is measured in a manner consistent with that in the statement of comprehensive income.

Incomes and profits information by business segment are as follows:

	2019					2018			
	Domestic		Oversea		Total Baht	Domestic		Oversea	Total Baht
	Water Business Baht	Power Business Baht	Water Business Baht	Holding Company Baht		Water Business Baht	Power Business Baht	Holding Company Baht	
Sales income	1,639,715,710	-	63,133	-	1,639,778,843	1,523,103,410	-	-	1,523,103,410
Services income	207,274,027	10,194,976	-	-	217,469,003	182,013,130	3,168,467	-	185,181,597
Total income	1,846,989,737	10,194,976	63,133	-	1,857,247,846	1,705,116,540	3,168,467	-	1,708,285,007
Gain (loss) from operations	527,824,119	(15,384,568)	(1,362,544)	(15,784,300)	495,292,707	472,344,190	(14,116,004)	(792,262)	457,435,924
Other income	3,105,795	142,511,722	730	53,187	145,671,434	7,544,114	155,123,599	28,331	162,696,044
Finance costs	(72,841,472)	(268,676,968)	(506,465)	-	(342,024,905)	(79,430,104)	(287,125,136)	-	(366,555,240)
Share of profit (loss) from investments in associates and interests in joint ventures	-	1,894,588,338	(13,470,680)	-	1,881,117,658	-	2,047,414,903	-	2,047,414,903
Income tax expense	(32,919,281)	(9,928,562)	-	-	(42,847,843)	(28,821,467)	(20,272,301)	-	(49,093,768)
Profit (loss) for the year	425,169,161	1,743,109,962	(15,338,959)	(15,731,113)	2,137,209,051	371,636,733	1,881,025,061	(763,931)	2,251,897,863
Net profit attributable to non-controlling interests					(29)				(36)
Net profit attributable to equity-holders of the parent					2,137,209,022				2,251,897,827
Segment depreciation and amortisation	198,791,380	20,020,434	-	-	218,811,814	188,652,437	15,112,476	-	203,764,913

Assets and liabilities information by business segment are as following:

Non-current assets
 Segment non-current assets
 Other assets
 Segment other assets
 Total assets
 Segment liabilities

Non-current assets
 Segment non-current assets
 Other assets
 Segment other assets
 Total assets
 Segment liabilities

31 December 2019					
Domestic		Oversea			Total Baht
Water business Baht	Power business Baht	Water business Baht	Holding company Baht		
5,995,949,378	15,588,039,278	2,760,461,450	-		24,344,450,106
989,883,985	1,020,819,841	38,265,047	25,298,451		2,074,267,324
6,985,833,363	16,608,859,119	2,798,726,497	25,298,451		26,418,717,430
4,701,864,111	7,897,021,812	17,052,050	243,512,170		12,859,450,143
31 December 2018					
Domestic		Oversea			Total Baht
Water business Baht	Power business Baht	Water business Baht	Holding company Baht		
5,815,977,169	15,883,690,645	-	-		21,699,667,814
743,801,096	1,328,167,501	-	1,629,437		2,073,598,034
6,559,778,265	17,211,858,146	-	1,629,437		23,773,265,848
1,867,153,894	7,856,621,321	-	220,769		9,723,995,984

Non-current assets presented above are non-current assets other than financial instruments and deferred tax assets.

Business segment information in the consolidated financial statement is as follows:

	31 December 2019					31 December 2018			
	Domestic		Oversea		Total Baht	Domestic		Oversea	
	Water Business Baht	Power Business Baht	Water Business Baht	Holding Company Baht		Water Business Baht	Power Business Baht	Holding Company Baht	Total Baht
Cash and cash equivalents	601,476,997	106,275,794	21,540,062	25,298,451	754,591,304	334,898,688	516,934,170	1,629,437	853,462,295
Investments in associates	-	11,872,208,582	2,715,428,335	-	14,587,636,917	-	12,630,879,987	-	12,630,879,987
Interests in joint ventures	-	737,554,465	-	-	737,554,465	-	724,116,727	-	724,116,727
Other long-term investments, net	-	253,557,521	-	-	253,557,521	-	267,430,208	-	267,430,208
Building and equipment, net	3,342,691,176	562,511,057	45,033,115	-	3,950,235,348	3,115,260,267	99,056,070	-	3,214,316,337
Right for production and distribution of industrial water, net	117,306,279	-	-	-	117,306,279	125,998,279	-	-	125,998,279
Intangible assets, net	1,918,164,164	-	-	-	1,918,164,164	1,955,670,616	-	-	1,955,670,616
Goodwill	610,669,873	2,162,207,653	-	-	2,772,877,526	610,669,873	2,162,207,653	-	2,772,877,526
Others	395,524,874	914,544,047	16,724,985	-	1,326,793,906	417,280,542	811,233,331	-	1,228,513,873
Total assets	6,985,833,363	16,608,859,119	2,798,726,497	25,298,451	26,418,717,430	6,559,778,265	17,211,858,146	1,629,437	23,773,265,848

7 Cash and cash equivalents

	Consolidated financial statements		Separate financial statements	
	2019 Baht	2018 Baht	2019 Baht	2018 Baht
Cash	263,621	366,977	213,621	336,977
Deposits held at call	754,327,683	853,095,318	541,355,701	193,175,731
Total	754,591,304	853,462,295	541,569,322	193,512,708

The interest rates on deposits are as follows:

	Consolidated financial statements		Separate financial statements	
	2019 % (per annum)	2018 % (per annum)	2019 % (per annum)	2018 % (per annum)
Deposits held at call	0.10 - 0.625	0.10 - 0.625	0.10 - 0.625	0.10 - 0.625

8 Trade and other receivables, net

	Consolidated financial statements		Separate financial statements	
	2019 Baht	2018 Baht	2019 Baht	2018 Baht
Trade receivables - third parties	148,076,199	150,386,633	98,017,038	105,249,888
<u>Less</u> Allowance for doubtful accounts	(10,041,921)	(9,226,299)	(10,041,921)	(9,226,299)
Trade accounts receivable, net	138,034,278	141,160,334	87,975,117	96,023,589
Trade receivables - related parties (Note 28)	24,928,874	31,226,621	46,170,433	44,689,649
Prepaid expenses	4,674,721	2,100,030	3,892,343	949,115
Accrued income	63,596,707	60,691,824	86,650,605	52,195,528
Dividend receivable	564,287,076	31,450,592	-	-
Other receivables	15,856,987	2,443,320	52,798,197	9,819,623
Total	811,378,643	269,072,721	277,486,695	203,677,504

Outstanding trade receivables can be analysed as follows:

	Consolidated financial statements		Separate financial statements	
	2019 Baht	2018 Baht	2019 Baht	2018 Baht
Within due	124,510,610	115,888,685	74,848,415	70,751,940
Overdue				
Up to 3 months	13,523,668	25,271,649	13,126,702	25,271,649
3 - 6 months	706,281	992,247	706,281	992,247
6 - 12 months	1,913,367	2,878,948	1,913,367	2,878,948
Over 12 months	7,422,273	5,355,104	7,422,273	5,355,104
	148,076,199	150,386,633	98,017,038	105,249,888
<u>Less</u> Allowance for doubtful debts	(10,041,921)	(9,226,299)	(10,041,921)	(9,226,299)
	138,034,278	141,160,334	87,975,117	96,023,589

9 Investments in associates, subsidiaries and interests in joint ventures

9.1 Investments in associates and interests in joint ventures

The material investments in associates and joint ventures are as follows:

Entity name	Country	Nature of business	% of ownership interest		Consolidated financial statements		Separate financial statements	
					Investment at equity method		Investment at cost method	
			2019	2018	2019	2018	2019	2018
			%	%	Million Baht	Million Baht	Million Baht	Million Baht
Associates:								
GHECO - One Company Limited	Thailand	Power plant operation and sale of electricity	35	35	7,894	8,913	-	-
Immaterial associates					6,694	3,718	-	-
Total					14,588	12,631	-	-
Joint ventures:								
Immaterial joint ventures					738	724	159	133
Total					738	724	159	133

The Group has contingent liabilities relating to guarantee of associates' loans by 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 movements of investments in associates are as follows:

	Consolidated financial statements	
	2019 Baht	2018 Baht
As at 1 January	12,630,879,987	10,626,537,022
Additions	2,768,277,303	432,422,900
Translation adjustments	2,591,000	-
Share of profits in associates	1,846,172,983	2,010,951,777
Impact of changes in accounting policies (Note 2.2)	(1,431,260,052)	-
Dividends received	(1,229,024,304)	(439,031,712)
As at 31 December	14,587,636,917	12,630,879,987

Dividend income from associates are as follows:

	Consolidated financial statements	
	2019 Baht	2018 Baht
GHECO-One Company Limited	564,287,076	92,352,679
Gulf TS1 Company Limited	114,625,832	48,463,128
Gulf TS2 Company Limited	107,780,595	53,678,963
Gulf TS3 Company Limited	128,491,376	7,603,040
Gulf TS4 Company Limited	109,558,806	18,382,350
Others	204,280,619	218,551,552
Total	1,229,024,304	439,031,712

On 28 March 2019, the Group acquired 2,283,787 ordinary shares of Cua Lo Water Supply Joint Stock Company, a company registers in the Socialist Republic of Vietnam and engages in production and distribution of water supply in the Socialist Republic of Vietnam at a par value of Vietnamese Dong 10,000 per share, equivalent to 47% ownership interests. The Group paid in the amount of Vietnamese Dong 23,455,517,400, equivalent to Baht 32,157,514.

On 25 October 2019, the Group acquired 33,986,774 ordinary shares of Duong River Surface Water Plant Joint Stock Company, a company registers in the Socialist Republic of Vietnam and engages in production and distribution of water supply in the Socialist Republic of Vietnam at a par value of Vietnamese Dong 10,000 per share, equivalent to 34% ownership interests. The Group partially paid for share capital in the amount of Vietnamese Dong 1,886,265,957,000, equivalent to Baht 2,451,235,290.

Details of the purchase consideration and net assets acquired of significant entity at acquisition date are as follows:

	Baht
<i>Purchase consideration</i>	
Cash paid	2,451,235,290
Contingent consideration	242,915,209
Total purchase consideration	<u>2,694,150,499</u>
<i>Net assets acquired</i>	
Cash and cash equivalents	127,885,277
Trade and other receivables	180,344,317
Inventory	1,031,470
Other current assets	248,569,800
Building and equipment	5,274,688,004
Other non-current assets	4,673,832
Trade and other payables	(177,320,681)
Other current liabilities	(49,424,133)
Long-term loans	(4,509,272,444)
Net identifiable assets acquired	<u>1,101,175,442</u>
Group's share in associates (34%)	374,399,650
Goodwill	2,319,750,849
Net assets acquired	<u>2,694,150,499</u>

The Group has an obligation of contingent consideration from business acquisition in cash which the payment will depend on the counterparty fulfillments of the condition under the agreement.

As at 31 December 2019, the Group is in the process of completing appraising the net assets acquired. The Group will adjust the fair value of net assets and price considerations upon the completion of the process.

The movements of interests in joint ventures are as follows:

	Consolidated financial statements		Separate financial statements	
	2019 Baht	2018 Baht	2019 Baht	2018 Baht
As at 1 January	724,116,727	392,305,890	132,825,000	6,247,500
Additions	26,075,008	320,577,500	26,075,000	126,577,500
Translation adjustments	(15,009,877)	(1,177,960)	-	-
Share of profit in joint ventures	34,944,675	36,463,126	-	-
Dividend received	(32,572,068)	(24,051,829)	-	-
As at 31 December	737,554,465	724,116,727	158,900,000	132,825,000

During the year ended 31 December 2019, Gulf WHA MT Natural Gas Distribution Company Limited issued additional ordinary shares. The Group purchased all increased ordinary shares to maintain its ownership interests.

Summary of the financial information of associates

The table below is a summary of financial information for associates that are material to the Group. The financial information is included in associates own financial statements which has been adjusted with the adjustments necessary for the equity method including, adjusting fair value and differences in accounting policy.

	2019 Baht	2018 Baht
<i>Summarised of performance</i>		
Revenue	10,951,256,418	12,293,643,285
Profit before income tax	1,572,321,154	3,847,182,577
Income tax	339,890,028	39,461,606
Profit for the year	1,912,211,182	3,886,644,183
Total comprehensive income	1,912,211,182	3,886,644,183
Dividends received from associate	564,287,076	92,352,679
	2019 Baht	2018 Baht
<i>Summarised statement of financial position</i>		
Current assets	8,297,758,031	7,408,308,582
Non-current assets	32,816,247,881	32,712,798,672
Current liabilities	(3,615,946,073)	(4,317,401,153)
Non-current liabilities	(14,941,725,232)	(10,336,051,766)
Net assets	22,556,334,607	25,467,654,335
Group's share in associates	35%	35%
Associates carrying amount	7,894,412,075	8,913,374,035

Individually immaterial associates and joint ventures

The table below is the carrying amount of its interests, in aggregate, all individually immaterial associates and joint ventures that are accounted for using equity method.

	2019 Baht	2018 Baht
Aggregate carrying amount of individually immaterial associates	6,693,224,842	3,717,505,952
The Group's share of:		
Profit for the year	869,536,985	650,647,923
Other comprehensive income	2,591,000	-
Total comprehensive income	872,127,985	650,647,923
Aggregate carrying amount of individually immaterial joint ventures	737,554,465	724,116,727
The Group's share of:		
Profit for the year	36,944,675	36,463,126
Other comprehensive income	(15,009,877)	(1,177,960)
Total comprehensive income	19,934,798	35,285,166

9.2 Investments in subsidiaries

The Group has subsidiaries included in its 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	
			2019 %	2018 %	2019 %	2018 %
WHA Water Company Limited	Thailand	Water resources, development and management	100	100	-	-
WHA Energy Company Limited and its subsidiaries:	Thailand	Holding company	100	100	-	-
WHA Energy 2 Company Limited	Thailand	Holding company	-	-	100	100
WHA Solar Company Limited	Thailand	Power plant operation and sale of electricity	-	-	100	100
WHAUP International Company Limited and its subsidiaries:	Thailand	Holding company	100	100	-	-
WHAUP (SG) 1 PTE. Limited and its subsidiaries	Singapore	Holding company	-	-	100	100
WHAUP (SG) 2 PTE. Limited and its subsidiary	Singapore	Holding company	-	-	100	100
WHAUP (SG) 2DR PTE. Limited	Singapore	Holding company	-	-	100	-
WHAUP Nghe An Joint Stock Company	Vietnam	Water Industrial and waste water treatment	-	-	100	100

The movements of investments in subsidiaries are as follows:

	Separate financial statements	
	2019 Baht	2018 Baht
As at 1 January	9,324,499,944	9,290,749,955
Additions	-	33,749,989
As at 31 December	9,324,499,944	9,324,499,944

On 1 August 2019, WHAUP (SG) 2DR PTE.LTD was incorporated for the purpose of operating the investment of industrial water in the Socialist Republic of Vietnam with registered ordinary shares 100,000 shares at USD 1 each, amounting to USD 100,000. The Group holds 100,000 ordinary shares, equivalent to 100% of ownership interests.

10 Buildings and equipment, net

	Consolidated financial statements										
	Building improvements Baht	Buildings and structure Baht	Tools Baht	Equipment, furniture and fixtures Baht	Vehicles Baht	Raw water pipes Baht	Industrial water production systems Baht	Waste water treatment systems Baht	Solar systems Baht	Construction in progress Baht	Total Baht
As at 1 January 2018											
Cost	7,238,269	271,273,919	122,473,298	7,481,085	-	1,870,756,752	823,784,153	207,306,222	-	270,892,558	3,581,206,256
Less Accumulated depreciation	(2,547,165)	(28,614,799)	(58,978,142)	(1,553,874)	-	(248,271,847)	(139,539,725)	(12,591,352)	-	-	(492,096,904)
Net book amount	4,691,104	242,659,120	63,495,156	5,927,211	-	1,622,484,905	684,244,428	194,714,870	-	270,892,558	3,089,109,352
For the year ended 31 December 2018											
Opening net book amount	4,691,104	242,659,120	63,495,156	5,927,211	-	1,622,484,905	684,244,428	194,714,870	-	270,892,558	3,089,109,352
Additions	1,986,849	-	4,861,410	2,983,972	672,897	10,194,696	-	73,598	-	247,897,595	268,671,017
Transfers in (out)	567,546	-	5,573,635	1,986,053	-	161,021,700	131,390,417	85,631,720	35,476,439	(421,647,510)	-
Depreciation charged during the year (Note 23)	(1,071,535)	(9,148,972)	(10,058,117)	(2,120,615)	(89,228)	(80,166,782)	(30,028,363)	(9,540,631)	(1,239,789)	-	(143,464,032)
Closing net book amount	6,173,964	233,510,148	63,872,084	8,776,621	583,669	1,713,534,519	785,606,482	270,879,557	34,236,650	97,142,643	3,214,316,337
As at 31 December 2018											
Cost	9,792,664	271,273,919	132,908,343	12,451,110	672,897	2,041,973,148	955,174,570	293,011,540	35,476,439	97,142,643	3,849,877,273
Less Accumulated depreciation	(3,618,700)	(37,763,771)	(69,036,259)	(3,674,489)	(89,228)	(328,438,629)	(169,568,088)	(22,131,983)	(1,239,789)	-	(635,560,936)
Net book amount	6,173,964	233,510,148	63,872,084	8,776,621	583,669	1,713,534,519	785,606,482	270,879,557	34,236,650	97,142,643	3,214,316,337

Consolidated financial statements										
Building improvements Baht	Buildings and structure Baht	Tools Baht	Equipment, furniture and fixtures Baht	Vehicles Baht	Raw water pipes Baht	Industrial water production systems Baht	Waste water treatment systems Baht	Solar systems Baht	Construction in progress Baht	Total Baht
9,792,664 (3,618,700)	271,273,919 (37,763,771)	132,908,343 (69,036,259)	12,451,110 (3,674,489)	672,897 (89,228)	2,041,973,148 (328,438,629)	955,174,570 (169,568,088)	293,011,540 (22,131,983)	35,476,439 (1,239,789)	97,142,643 -	3,849,877,273 (635,560,936)
6,173,964	233,510,148	63,872,084	8,776,621	583,669	1,713,534,519	785,606,482	270,879,557	34,236,650	97,142,643	3,214,316,337
6,173,964 4,462,472 1,075,000 -	233,510,148 740,000 - -	63,872,084 7,328,992 13,377,385 -	8,776,621 622,888 176,000 -	583,669 - - (146,050)	1,713,534,519 9,327,363 88,140,383 -	785,606,482 219,104 58,150,935 -	270,879,557 - 13,753,385 -	34,236,650 - 168,802,953 -	97,142,643 874,942,621 (343,476,041) (3,582,704)	3,214,316,337 897,643,440 - (3,728,754)
(1,776,884)	(9,157,588)	(10,873,024)	(2,495,670)	(113,276)	(83,357,954)	(33,246,761)	(10,408,612)	(6,565,906)	-	(157,995,675)
9,934,552	225,092,560	73,705,437	7,079,839	324,343	1,727,644,311	810,729,760	274,224,330	196,473,697	625,026,519	3,950,235,348
15,330,136 (5,395,584)	272,013,919 (46,921,359)	153,614,720 (79,909,283)	13,249,998 (6,170,159)	485,981 (161,638)	2,139,440,894 (411,796,583)	1,013,544,609 (202,814,849)	306,764,925 (32,540,595)	204,279,392 (7,805,695)	625,026,519 -	4,743,751,093 (793,515,745)
9,934,552	225,092,560	73,705,437	7,079,839	324,343	1,727,644,311	810,729,760	274,224,330	196,473,697	625,026,519	3,950,235,348

WHA Utilities and Power Public Company Limited
Notes to the Consolidated and Separate Financial Statements
For the year ended 31 December 2019

	Separate financial statements									
	Building improvements Baht	Buildings and structure Baht	Tools Baht	Equipment, furniture and fixtures Baht	Vehicles Baht	Raw water pipes Baht	Industrial water production systems Baht	Waste water treatment systems Baht	Construction in progress Baht	Total Baht
As at 1 January 2018										
Cost	7,238,269	271,273,919	117,729,735	7,481,085	-	1,845,813,294	613,598,672	207,306,222	164,671,787	3,235,112,983
<u>Less</u> Accumulated depreciation	(2,547,165)	(28,614,799)	(55,851,093)	(1,553,874)	-	(241,693,453)	(62,440,611)	(12,591,352)	-	(405,292,347)
Net book amount	4,691,104	242,659,120	61,878,642	5,927,211	-	1,604,119,841	551,158,061	194,714,870	164,671,787	2,829,820,636
For the year ended 31 December 2018										
Opening net book amount	4,691,104	242,659,120	61,878,642	5,927,211	-	1,604,119,841	551,158,061	194,714,870	164,671,787	2,829,820,636
Additions	1,943,629	-	4,081,136	2,983,972	672,897	10,194,696	-	73,598	120,790,608	140,740,536
Transfers in (out)	532,710	-	5,573,636	1,986,053	-	161,021,700	13,348,730	85,631,721	(268,094,550)	-
Depreciation charged during the year (Note 23)	(1,071,193)	(9,148,972)	(9,884,264)	(2,120,615)	(89,228)	(79,237,328)	(22,355,201)	(9,540,631)	-	(133,447,432)
Closing net book amount	6,096,250	233,510,148	61,649,150	8,776,621	583,669	1,696,098,909	542,151,590	270,879,558	17,367,845	2,837,113,740
As at 31 December 2018										
Cost	9,714,608	271,273,919	127,384,507	12,451,110	672,897	2,017,029,690	626,947,402	293,011,541	17,367,845	3,375,853,519
<u>Less</u> Accumulated depreciation	(3,618,358)	(37,763,771)	(65,735,357)	(3,674,489)	(89,228)	(320,930,781)	(84,795,812)	(22,131,983)	-	(538,739,779)
Net book amount	6,096,250	233,510,148	61,649,150	8,776,621	583,669	1,696,098,909	542,151,590	270,879,558	17,367,845	2,837,113,740

As at 1 January 2019

Cost
Less Accumulated depreciation

Net book amount

**For the year ended
31 December 2019**

Opening net book amount
Additions
Transfers in (out)
Disposal
Depreciation charged during the year (Note 23)

Closing net book amount

As at 31 December 2019

Cost
Less Accumulated depreciation

Net book amount

Separate financial statements									
Building improvements Baht	Buildings and structure Baht	Tools Baht	Equipment, furniture and fixtures Baht	Vehicles Baht	Raw water pipes Baht	Industrial water production systems Baht	Waste water treatment systems Baht	Construction in progress Baht	Total Baht
9,714,608	271,273,919	127,384,507	12,451,110	672,897	2,017,029,690	626,947,402	293,011,541	17,367,845	3,375,853,519
(3,618,358)	(37,763,771)	(65,735,357)	(3,674,489)	(89,228)	(320,930,781)	(84,795,812)	(22,131,983)	-	(538,739,779)
6,096,250	233,510,148	61,649,150	8,776,621	583,669	1,696,098,909	542,151,590	270,879,558	17,367,845	2,837,113,740
6,096,250	233,510,148	61,649,150	8,776,621	583,669	1,696,098,909	542,151,590	270,879,558	17,367,845	2,837,113,740
4,206,172	-	7,206,092	567,532	-	9,191,849	219,104	-	86,161,216	107,551,965
1,075,000	-	13,377,386	176,000	-	69,682,439	1,000,000	13,753,385	(99,064,210)	-
-	-	-	-	(146,050)	-	-	-	-	(146,050)
(1,749,608)	(9,148,972)	(10,592,283)	(2,494,822)	(113,276)	(82,297,906)	(22,964,456)	(10,408,612)	-	(139,769,935)
9,627,814	224,361,176	71,640,345	7,025,331	324,343	1,692,675,291	520,406,238	274,224,331	4,464,851	2,804,749,720
14,995,780	271,273,919	147,967,985	13,194,642	485,981	2,095,903,978	628,166,506	306,764,926	4,464,851	3,483,218,568
(5,367,966)	(46,912,743)	(76,327,640)	(6,169,311)	(161,638)	(403,228,687)	(107,760,268)	(32,540,595)	-	(678,468,848)
9,627,814	224,361,176	71,640,345	7,025,331	324,343	1,692,675,291	520,406,238	274,224,331	4,464,851	2,804,749,720

Depreciation charged to the statements of comprehensive income are as follows:

	Consolidated financial statements		Separate financial statements	
	2019 Baht	2018 Baht	2019 Baht	2018 Baht
Cost of sales	100,921,353	95,104,610	88,843,360	85,088,010
Cost of services	54,966,763	46,581,103	48,819,016	46,581,103
Administrative expense	2,107,559	1,778,319	2,107,559	1,778,319
	157,995,675	143,464,032	139,769,935	133,447,432

11 Right to operate and distribute industrial water, net

The company had entered into a contract to obtain the right to produce and distribute industrial water. The contractual period is 25 years commencing from 1 July 2008 to 30 June 2033.

The movements of right for production and distribution of industrial water are as follows:

	Consolidated and Separate financial statements	
	2019 Baht	2018 Baht
As at 1 January		
Cost	217,300,000	217,300,000
<u>Less</u> Accumulated amortisation	(91,301,721)	(82,609,721)
Net book amount	125,998,279	134,690,279
For the year ended 31 December		
Opening net book amount	125,998,279	134,690,279
Amortisation charged during the year (Note 23)	(8,692,000)	(8,692,000)
Closing net book amount	117,306,279	125,998,279
As at 31 December		
Cost	217,300,000	217,300,000
<u>Less</u> Accumulated amortisation	(99,993,721)	(91,301,721)
Net book amount	117,306,279	125,998,279

12 Intangible assets, net

	Consolidated financial statements		
	Right to operate and distribute industrial water and waste management Baht	Computer program and water plant maintenance program Baht	Total Baht
For the year ended 31 December 2018			
Open net book amount	1,989,815,619	1,952,191	1,991,767,810
Additions	-	1,639,000	1,639,000
Amortisation charged during the year (Note 23)	(36,902,219)	(833,975)	(37,736,194)
Closing net book amount	1,952,913,400	2,757,216	1,955,670,616
As at 31 December 2018			
Cost	2,052,469,461	3,672,800	2,056,142,261
<u>Less</u> Accumulated amortisation	(99,556,061)	(915,584)	(100,471,645)
Net book amount	1,952,913,400	2,757,216	1,955,670,616
For the year ended 31 December 2019			
Open net book amount	1,952,913,400	2,757,216	1,955,670,616
Additions	-	745,000	745,000
Amortisation charged during the year (Note 23)	(36,902,219)	(1,349,233)	(38,251,452)
Closing net book amount	1,916,011,181	2,152,983	1,918,164,164
As at 31 December 2019			
Cost	2,052,469,461	4,417,800	2,056,887,261
<u>Less</u> Accumulated amortisation	(136,458,280)	(2,264,817)	(138,723,097)
Net book amount	1,916,011,181	2,152,983	1,918,164,164
	Separate financial statements		
	Right to operate and distribute industrial water and waste management Baht	Computer program and water plant maintenance program Baht	Total Baht
For the year ended 31 December 2018			
Open net book amount	1,989,815,619	1,952,191	1,991,767,810
Additions	-	1,639,000	1,639,000
Amortisation charged during the year (Note 23)	(36,902,219)	(833,975)	(37,736,194)
Closing net book amount	1,952,913,400	2,757,216	1,955,670,616
As at 31 December 2018			
Cost	2,052,469,461	3,672,800	2,056,142,261
<u>Less</u> Accumulated amortisation	(99,556,061)	(915,584)	(100,471,645)
Net book amount	1,952,913,400	2,757,216	1,955,670,616
For the year ended 31 December 2019			
Open net book amount	1,952,913,400	2,757,216	1,955,670,616
Additions	-	745,000	745,000
Transfer during the year	(43,614,053)	-	(43,614,053)
Amortisation charged during the year (Note 23)	(36,902,219)	(1,349,233)	(38,251,452)
Closing net book amount	1,872,397,128	2,152,983	1,874,550,111
As at 31 December 2019			
Cost	2,008,855,408	4,417,800	2,013,273,208
<u>Less</u> Accumulated amortisation	(136,458,280)	(2,264,817)	(138,723,097)
Net book amount	1,872,397,128	2,152,983	1,874,550,111

13 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	
	2019 Baht	2018 Baht	2019 Baht	2018 Baht
Power business	2,162,207,653	2,162,207,653	-	-
Water business	610,669,873	610,669,873	597,693,413	610,669,873
	2,772,877,526	2,772,877,526	597,693,413	610,669,873

During the year, the Company transferred the right to produce and distribute industrial water and waste water treatment to the subsidiary.

The recoverable amount of a CGU is determined based on fair value less costs of disposal and calculate 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 beyond 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 business (%)	Water business (%)
Gross margin	-	26.5
Growth rate	(2.5)	6.3
Discount rate	5.5	2.8

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 business (%)	Water business (%)
Gross margin	-	14.7
Growth rate	(4.5)	(6.7)
Discount rate	7.7	29.2

14 Deferred income taxes

The analysis of deferred tax assets and deferred tax liabilities are as follows:

	Consolidated financial statements		Separate financial statements	
	2019 Baht	2018 Baht	2019 Baht	2018 Baht
Deferred tax assets:				
to be recoverd more than 12 months	154,004	-	-	-
Deferred tax liabilities:				
to be settled within 12 months	(16,276,256)	(17,026,339)	(13,263,875)	(14,251,801)
to be settled more than 12 months	(106,517,032)	(122,969,768)	(80,037,299)	(100,758,266)
	(122,793,288)	(139,996,107)	(93,301,174)	(115,010,067)
Deferred tax asset, net	(122,639,284)	(139,996,107)	(93,301,174)	(115,010,067)

The movements in deferred tax assets and liabilities during the year are as follows:

	Consolidated financial statements					
	As at 1 January 2018 Baht	Recognised to profit or loss Baht	As at 31 December 2018 Baht	Recognised to profit or loss Baht	Recognised to other comprehensive income Baht	As at 31 December 2019 Baht
Deferred tax assets						
Allowance for doubtful account	5,212,768	(3,367,369)	1,845,399	162,985	-	2,008,384
Employee benefit obligations	2,197,270	1,210,620	3,407,890	713,743	(353,941)	3,767,692
Cash paid for transfer of water business	529,531,858	(10,976,000)	518,555,858	(10,976,000)	-	507,579,858
Provision liabilities from water business	60,919,707	5,394,642	66,314,349	1,778,928	-	68,093,277
Interest expenses paid on borrowings	7,575,700	(7,575,700)	-	-	-	-
	605,437,303	(15,313,807)	590,123,496	(8,320,344)	(353,941)	581,449,211
Deferred tax liabilities						
Right to operate and distribute industrial water and waste management	(397,963,124)	7,380,444	(390,582,680)	7,380,444	-	(383,202,236)
Depreciation	(327,262,120)	15,140,060	(312,122,060)	15,135,233	-	(296,986,827)
Fair value adjustment from long-term investment	(27,760,577)	2,774,537	(24,986,040)	2,774,537	-	(22,211,503)
Debenture underwriting fees	-	(2,428,823)	(2,428,823)	933,082	-	(1,495,741)
Interest expenses paid on borrowings	-	-	-	(192,188)	-	(192,188)
	(752,985,821)	22,866,218	(730,119,603)	26,031,108	-	(704,088,495)
Deferred income tax, net	(147,548,518)	7,552,411	(139,996,107)	17,710,764	(353,941)	(122,639,284)

Separate financial statements						
	As at 1 January 2018 Baht	Recognised to profit or loss Baht	As at 31 December 2018 Baht	Recognised to profit or loss Baht	Recognised to other comprehensive income Baht	As at 31 December 2019 Baht
Deferred tax assets						
Allowance for doubtful account	3,543,568	(1,698,169)	1,845,399	162,985	-	2,008,384
Employee benefit obligations	2,197,270	1,210,620	3,407,890	713,743	(353,941)	3,767,692
Cash paid for transfer of water business	529,531,858	(10,976,000)	518,555,858	(10,976,000)	-	507,579,858
Provision liabilities from water business	60,919,707	5,394,642	66,314,349	182,726	-	66,497,075
Interest expenses paid on borrowings	7,575,700	(7,575,700)	-	-	-	-
	603,768,103	(13,644,607)	590,123,496	(9,916,546)	(353,941)	579,853,009
Deferred tax liabilities						
Right to operate and distribute industrial water and waste management	(397,963,124)	7,380,444	(390,582,680)	16,103,253	-	(374,479,427)
Depreciation	(327,262,120)	15,140,060	(312,122,060)	15,135,233	-	(296,986,827)
Debenture underwriting fees	-	(2,428,823)	(2,428,823)	933,082	-	(1,495,741)
Interest expenses paid on borrowings	-	-	-	(192,188)	-	(192,188)
	(725,225,244)	20,091,681	(705,133,563)	31,979,380	-	(673,154,183)
Deferred income tax, net	(121,457,141)	6,447,074	(115,010,067)	22,062,834	(353,941)	(93,301,174)

15 Trade and other payable

	Consolidated financial statements		Separate financial statements	
	2019 Baht	2018 Baht	2019 Baht	2018 Baht
Trade payable from other parties	68,059,550	31,693,672	26,127,913	27,933,593
Trade payable from related parties (Note 27)	66,412,692	63,731,063	65,351,067	63,624,063
Accrued interest expense	64,230,550	52,017,027	64,230,550	52,017,027
Accrued expenses	93,151,228	42,074,237	38,829,431	27,923,086
Others	359,955	202,919	94,393	44,262
Total	292,213,975	189,718,918	194,633,354	171,542,031

16 Borrowings

	Consolidated and Separate financial statements	
	2019 Baht	2018 Baht
Current		
Short-term borrowings from financial institutions	1,765,000,000	-
Current portion of long-term borrowings from financial institution	124,729,533	-
Current portion of debentures	3,998,377,529	-
	5,888,107,062	-
Non-current		
Long-term borrowings from financial institution	874,343,972	-
Debentures	4,994,265,166	8,987,977,050
	5,868,609,138	8,987,977,050
Total	11,756,716,200	8,987,977,050

The movements in loans are as follows:

	Consolidated and Separate financial statements			
	Short-term borrowings from financial institutions Baht	Long-term borrowings from financial institution Baht	Debentures Baht	Total Baht
As at 1 January 2018	-	3,936,901,708	3,993,421,481	7,930,323,189
Additions	-	-	5,000,000,000	5,000,000,000
Repayment	-	(3,999,000,000)	-	(3,999,000,000)
Deferred direct finance cost	-	-	(8,969,489)	(8,969,489)
Amortisation of deferred direct finance cost	-	62,098,292	3,525,058	65,623,350
As at 31 December 2018	-	-	8,987,977,050	8,987,977,050
Additions	1,765,000,000	1,000,000,000	-	2,765,000,000
Deferred direct finance cost	-	(1,000,000)	-	(1,000,000)
Amortisation of deferred direct finance cost	-	73,505	4,665,645	4,739,150
As at 31 December 2019	1,765,000,000	999,073,505	8,992,642,695	11,756,716,200

Maturity of borrowings are as follows:

	Consolidated and Separate financial statements	
	2019 Baht	2018 Baht
Within 1 year	5,888,107,062	-
Between 2 years and 5 years	4,550,540,922	7,670,220,972
Over 5 years	1,318,068,216	1,317,756,078
Total	11,756,716,200	8,987,977,050

The effective interest rates at the statement of financial position date were as follows:

	Consolidated and Separate financial statements	
	2019 %	2018 %
Long-term borrowing from financial institution	3.47 - 3.48	2.10
Debentures	2.70 - 3.63	2.70 - 3.63

The carrying amounts and fair values of certain long-term loans are as follows:

	Consolidated and separate financial statements			
	Carrying amount		Fair values	
	2019 Baht	2018 Baht	2019 Baht	2018 Baht
Long-term borrowing from financial institution	999,073,505	-	999,073,505	-
Debentures	8,992,642,695	8,987,977,050	9,136,743,356	9,045,434,346
	9,991,716,200	8,987,977,050	10,135,816,861	9,045,434,346

The fair values are based on discounted cash flows using a discount rate based upon the loan rate of 3.47% - 3.48% 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 movements in loans from investing activities during the year are as follows:

	Consolidated and Separate financial statements			
	Short-term borrowing from financial institutions Baht	Long-term borrowing from financial institution Baht	Debentures Baht	Total Baht
As at 1 January 2018	-	3,936,901,708	3,993,421,481	7,930,323,189
Cash flows in (out), net	-	(3,999,000,000)	4,991,030,511	992,030,511
Amortisation of deferred direct finance cost	-	62,098,292	3,525,058	65,623,350
As at 31 December 2018	-	-	8,987,977,050	8,987,977,050
Cash flows in, net	1,765,000,000	999,000,000	-	2,764,000,000
Amortisation of deferred direct finance cost	-	73,505	4,665,645	4,739,150
As at 31 December 2019	1,765,000,000	999,073,505	8,992,642,695	11,756,716,200

17 Provision for liabilities from water business

Provision for liabilities from water business represents the annual right lease fees to be paid according to the Strategic Partnership Agreement and Right Lease Agreement to operate the industrial water business and the waste water management business. The annual right lease fees are calculated at 1% for the first-three years since 30 March 2016 and 3% for the fourth-fiftieth year of revenue from water business before deduction of expenses over the contract period.

Movements of provision for liabilities from water business are as follows:

	Consolidated financial statements		Separate financial statements	
	2019 Baht	2018 Baht	2019 Baht	2018 Baht
As at 1 January	331,571,745	304,598,534	331,571,745	304,598,534
Provision paid during the year	(23,629,923)	(8,558,736)	(23,629,923)	(8,558,736)
Interest expense (Note 21)	32,524,561	35,531,947	31,754,543	35,531,947
Transfer right to subsidiary company	-	-	(7,210,992)	-
As at 31 December	340,466,383	331,571,745	332,485,373	331,571,745

18 Employee Benefit Obligations

	Consolidated and separate financial statements	
	2019 Baht	2018 Baht
Statement of Financial Position		
Retirement benefits	18,838,462	17,039,449
Profit or loss		
Retirement benefits	3,568,716	6,053,103
Other comprehensive income		
Remeasurements	(1,769,703)	-

The movement of employee benefit obligation for the year is as follows:

	Consolidated and separate financial statements	
	2019 Baht	2018 Baht
As at 1 January	17,039,449	10,986,346
Current service cost	3,266,360	3,134,346
Past service cost	-	2,591,537
Interest expense	302,356	327,220
Gain on remeasurements of retirement benefit obligations	(1,769,703)	-
As at 31 December	18,838,462	17,039,449

The principal actuarial assumptions used were as follows:

	Consolidated and separate financial statements	
	2019	2018
Discount rate	1.98%	2.41%
Salary increase rate	5.50%	6.35%
Retirement age	55 years old	55 years old
Turnover rate	9.00% - 15.00%	3.00% - 13.00%

Sensitivity analysis for each significant assumption used is as follows:

Consolidated and separate financial statements					
Impact on defined benefit obligation					
Change in assumption	Increase in assumption		Decrease in assumption		
	2019	2018	2019	2018	
Discount rate	1.00 %	Decrease by 5.07 %	Decrease by 8.29 %	Increase by 5.67 %	Increase by 9.42 %
Salary growth rate	1.00 %	Increase by 6.42 %	Increase by 9.99 %	Decrease by 5.86 %	Decrease by 8.94 %
Staff turnover rate	1.00 %	Decrease by 5.48 %	Decrease by 8.79 %	Increase by 2.93 %	Increase by 5.51 %

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 defined benefit obligation to significant actuarial assumption the same method (present value of the defined benefit obligation calculated with the projected unit credit method) has been applied as when calculating the retirement benefits recognised within the statement of financial position.

The weighted average durations of the retirement benefit obligation as at 31 December 2019 and 2018 are 8.24 and 8.68 years, respectively.

19 Dividends

On 26 April 2019, the shareholders at the Annual General Meeting for the year ended 2019 has approved a dividend payment for the operating results for the year ended 2018 at Baht 0.2115 per share, amounting to Baht 808.99 million. The dividend was paid on 22 May 2019.

On 8 November 2019, the Board of Directors at the Board of Directors Meeting No.9/2019 has approved a interim dividend payment for the operating results for the nine-month period ended of 30 September 2019 at Baht 0.0925 per share, amounting to Baht 353.81 Million. The dividend was paid on 4 December 2019.

On 27 April 2018, the shareholders at the Annual General Meeting for the year ended 2018 has approved a dividend payment for the operating results for the year ended 2017 at Baht 0.2034 per share, amounting to Baht 778.01 million. The dividend was paid on 21 May 2018.

20 Legal reserve

	Consolidated and separate financial statements	
	2019 Baht	2018 Baht
As at 1 January	112,766,796	73,100,541
Appropriation during the year	51,619,783	39,666,255
As at 31 December	164,386,579	112,766,796

Under the public limited company Act., B.E. 2535, the Company is required to set aside as a legal reserve at least 5% of its net profit after accumulated deficit brought forward (if any) until the reserve is not less than 10% of the registered capital. The legal reserve is non-distributable.

21 Other income

	Consolidated financial statements		Separate financial statements	
	2019 Baht	2018 Baht	2019 Baht	2018 Baht
Dividend income	74,983,505	74,983,505	921,322,161	804,281,964
Interest income	47,948,721	57,565,057	131,789,193	81,050,534
Guarantee fee	21,141,204	24,760,635	-	-
Gain from disposal of available-for-sale investments	922,759	567,306	922,759	288,666
Others	675,245	4,819,541	83,322	4,105,091
Total	145,671,434	162,696,044	1,054,117,435	889,726,255

22 Finance cost

	Consolidated financial statements		Separate financial statements	
	2019 Baht	2018 Baht	2019 Baht	2018 Baht
Long-term borrowing from financial institutions	15,575,233	106,935,339	15,575,233	106,935,339
Debentures	285,739,763	212,171,285	285,739,763	212,171,285
Debenture underwriting fees (Note 16)	4,665,645	3,525,058	4,665,645	3,525,058
Interest expense from provision for liabilities from water business (Note 17)	32,524,561	35,531,947	31,754,543	35,531,947
Others	3,519,703	8,391,611	-	1,229
Total	342,024,905	366,555,240	337,735,184	358,164,858

23 Expense by nature

	Consolidated financial statements		Separate financial statements	
	2019 Baht	2018 Baht	2019 Baht	2018 Baht
Cost of raw water	716,142,766	699,639,656	716,060,824	699,639,656
Employee benefit expense	106,367,854	91,628,848	105,813,520	91,628,848
Depreciation (Note 10)	157,995,675	143,464,032	139,769,935	133,447,432
Amortisation (Note 11, 12)	46,943,452	46,428,194	46,943,452	46,428,194
Operating lease	22,449,643	20,270,346	19,833,164	18,367,864
Professional fee	33,370,200	14,211,458	33,370,200	14,211,458

24 Income tax expense (benefit)

Income tax expenses (benefit) for the year ended 31 December can be summarised below:

	Consolidated financial statements		Separate financial statements	
	2019 Baht	2018 Baht	2019 Baht	2018 Baht
Current tax	60,324,270	56,646,179	5,616,031	-
Adjustments in respect of prior year	234,337	-	-	-
Deferred tax (Note 14)	(17,710,764)	(7,552,411)	(22,062,834)	(6,447,074)
Total	42,847,843	49,093,768	(16,446,803)	(6,447,074)

The tax on the Group's profit before tax differs from the theoretical amount that would arise using the basic tax rate of the year presents as follows:

	Consolidated financial statements		Separate financial statements	
	2019 Baht	2018 Baht	2019 Baht	2018 Baht
Profit before income tax	2,180,056,894	2,300,991,631	1,015,948,866	786,878,023
Profit exempt from BOI	(55,575,195)	(35,827,306)	(32,410,477)	-
Share of profit from investments in associates and interest in joint ventures	(1,881,117,658)	(2,047,414,903)	-	-
	243,364,041	217,749,422	983,538,389	786,878,023
Tax calculated at a tax rate of 20%	48,672,808	43,549,884	196,707,678	157,375,605
Tax effect:				
Double deductible expense	(692,772)	(725,813)	(692,772)	(725,813)
Income not subject to tax	(7,498,351)	(7,803,795)	(184,264,432)	(161,161,836)
Expenses not deductible for tax purpose	9,396,440	64,032	3,165,203	63,810
Utilisation of previously unrecognised tax losses	(31,362,480)	-	(31,362,480)	(1,998,840)
Tax losses for which no deferred income tax asset was recognised	24,097,861	14,009,460	-	-
Adjustments in respect of prior year	234,337	-	-	-
Income tax expense (benefit)	42,847,843	49,093,768	(16,446,803)	(6,447,074)

The tax relating to component of other comprehensive income is as follows:

Consolidated financial statements						
2019			2018			
Before tax Baht	Tax Baht	After tax Baht	Before tax Baht	Tax Baht	After tax Baht	
Currency translation differences	(22,148,436)	-	(22,148,436)	(423,012)	-	(423,012)
Remeasurements on employee benefit obligations	1,769,703	(353,941)	1,415,762	-	-	-
Share of other comprehensive income of associates and joint ventures	(12,418,877)	-	(12,418,877)	(1,177,960)	-	(1,177,960)
Total	(32,797,610)	(353,941)	(33,151,551)	(1,600,972)	-	(1,600,972)
Separate financial statement						
2019			2018			
Before tax Baht	Tax Baht	Before tax Baht	Tax Baht	Before tax Baht	Tax Baht	
Remeasurements on employee benefit obligations	1,769,703	(353,941)	1,415,762	-	-	-

25 Earnings per share

Basic earnings per share for the owners of the parent is calculated by dividing the profit attributable to the owners of the parent by the weighted average number of ordinary shares held by shareholders during the year.

	Consolidated financial statements		Separate financial statements	
	2019	2018	2019	2018
Profit attributable to ordinary shareholders of the Company (Baht)	2,137,209,022	2,251,897,827	1,032,395,669	793,325,097
Weighted average number of ordinary shares outstanding (shares)	3,825,000,000	3,825,000,000	3,825,000,000	3,825,000,000
Basic earnings per share (Baht per share)	0.56	0.59	0.27	0.21

The Company does not have any potential dilutive ordinary shares in issue for the years ended 31 December 2019 and 2018, so no diluted earnings per share is presented.

26 Commitments and contingent liabilities

Capital commitments

Capital commitment at the statement of financial position date, but not recognised in the financial statements is as follows:

	Consolidated financial statements		Separate financial statements	
	2019 Baht	2018 Baht	2019 Baht	2018 Baht
Construction in progress	238,463,925	112,393,045	18,630,607	11,978,287

Operating lease commitments

The Company has the obligations under long-term lease agreements for office building, vehicles and land with the term of contracts for 3 years, 5 years and 30 years, respectively. The obligations for rental payments are as follows:

	Consolidated financial statements		Separate financial statements	
	2019 Baht	2018 Baht	2019 Baht	2018 Baht
Not later than 1 year	14,867,590	14,484,838	13,408,237	13,025,485
Later than 1 year but not later than 5 years	39,302,259	41,117,005	32,925,436	34,886,118
Over 5 years	229,597,835	238,144,444	186,615,445	193,556,766
Total	283,767,684	293,746,287	232,949,118	241,468,369

Contingent liabilities

The Group has contingent liabilities relating to a guarantee under conditions of the standby letters of credit issued by the financial institutions according to the performance bond with power business in the total amount of Baht 175.59 million (2018: Baht 257.96 million), USD 5.50 million (2018: USD 7.72 million).

The Group has contingent liabilities relating to a guarantee issued by the financial institutions according to the performance bond with Provincial Electricity Authority and other in the total amount of Baht 7.64 million (2018: Baht 7.62 million).

The Group has contingent liabilities relating to a guarantee of Glow IPP Co., Ltd.'s loans by its ordinary shares which are classified as other long-term investment.

27 Assets pledged as collaterals

Company	Assets pledged as collaterals	Collaterals
WHA Energy Company Limited	Investment in ordinary shares of associates - Gulf JP NLL Company Limited amounted to 26.31 million shares - B.Grim Power (WHA) 1 Limited amounted to 3.84 million shares - Gulf VTP Company Limited amounted to 40.27 million shares - Gulf TS1 Company Limited amounted to 42.14 million shares - Gulf TS2 Company Limited amounted to 42.27 million shares - Gulf TS3 Company Limited amounted to 38.02 million shares - Gulf TS4 Company Limited amounted to 36.76 million shares - Gulf NLL2 Company Limited amounted to 36.01 million shares	Borrowings by Gulf JP NLL Co., Ltd. Borrowings by B.Grim Power (WHA) 1 Ltd. Borrowings by Gulf VTP Co., Ltd. Borrowings by Gulf TS1 Co., Ltd. Borrowings by Gulf TS2 Co., Ltd. Borrowings by Gulf TS3 Co., Ltd. Borrowings by Gulf TS4 Co., Ltd. Borrowings by Gulf NLL2 Co., Ltd.
WHA Energy 2 Company Limited	Investment in ordinary shares of associates - Gheco-One Company Limited amounted to 406.84 million Investment in other long-term investment - Glow IPP Company Limited amounted to 14.25 million shares	Borrowings by Gheco-One Co., Ltd. Borrowings by Glow IPP Co., Ltd.

28 Related-party transactions

Company's major shareholder is WHA Industrial Development Public Company Limited in proportion of 68.86% which has WHA Corporation Public Company Limited is an ultimate parent company. The remaining 31.14% of the shares are widely held.

Other related parties comprise the entities under common control of WHA Industrial Development Public Company Limited and WHA Corporation Public Company Limited.

Additional information for transactions with parties are as follows:

Transactions

	Consolidated financial statements		Separate financial statements	
	2019 Baht	2018 Baht	2019 Baht	2018 Baht
Ultimate parent company				
Revenue from sales and services	4,499,851	2,919,273	-	74,806
Management fee	1,378,200	1,579,200	1,378,200	1,579,200
Parent company				
Raw water cost	46,253,587	43,295,384	46,253,587	43,295,384
Service fee	180,000	180,000	180,000	180,000
Property Tax	41,885	-	41,885	-
Management fee	31,992,000	12,632,258	31,992,000	12,632,258
Rental fee	3,125,405	3,125,405	3,125,405	3,125,405
Advertising expense	420,000	164,839	-	-
Associates				
Revenue from sales and services	221,113,669	212,151,056	221,113,669	212,151,056
Interest income	34,490,451	54,087,897	-	-
Other income	20,024,853	27,298,110	-	2,537,475
Subsidiaries				
Revenue from sales and services	-	-	327,335,117	309,982,177
Interest income	-	-	130,618,464	78,913,353
Dividend income	-	-	921,322,161	804,281,964
Join ventures				
Revenue from sales and services	17,152,586	996,440	16,828,586	672,440
Interest income	11,398,141	849,463	-	384,805
Other income	1,116,351	-	-	-

	Consolidated financial statements		Separate financial statements	
	2019 Baht	2018 Baht	2019 Baht	2018 Baht
Other related parties				
Revenue from sales and services	4,541,133	4,289,177	4,541,133	4,237,095
Raw water cost	665,866,483	654,886,253	665,866,483	654,886,253
Electricity fee	785,576	774,322	785,576	774,322
Service fee	432,000	442,000	432,000	442,000
Property tax cost	688,912	689,058	688,912	689,058
Amortisation of right for production and distribution of water	8,692,000	8,692,000	8,692,000	8,692,000
Rental fee	7,734,249	6,955,241	5,185,959	5,052,759
Advertising expense	600,000	235,484	-	-
Control expense	1,800,000	1,800,000	1,800,000	1,800,000
Training	6,000	-	6,000	-

Outstanding balances

	Consolidated financial statements		Separate financial statements	
	2019 Baht	2018 Baht	2019 Baht	2018 Baht
Trade receivables				
Ultimate parent company	738,641	716,951	-	18,336
Associates	22,462,027	29,740,567	17,693,991	18,406,995
Subsidiaries	-	-	26,946,776	25,841,895
Joint ventures	1,306,570	360,675	1,116,046	13,995
Other related parties	421,636	408,428	413,620	408,428
Total	24,928,874	31,226,621	46,170,433	44,689,649
Accrued income				
Subsidiaries	-	-	44,171,938	12,067,420
Other related parties	510,363	336,263	510,363	336,263
Total	510,363	336,263	44,682,301	12,403,683
Dividend receivables				
Associates	564,287,076	31,450,592	-	-
Interest receivables				
Associates	-	1,549,177	-	-
Subsidiaries	-	-	51,706,075	9,257,017
Joint ventures	2,372,246	464,658	-	-
Total	2,372,246	2,013,835	51,706,075	9,257,017
Advance to related parties				
Subsidiaries	-	-	428,534	133,120
Others receivables				
Parent company	10,161	10,161	-	-
Other related parties	14,516	14,516	-	-
Total	24,677	24,677	-	-
Trade and other payables				
Parent company	8,000,068	4,499,492	8,000,068	4,499,492
Other related parties	58,412,624	59,231,571	57,350,999	59,124,571
Total	66,412,692	63,731,063	65,351,067	63,624,063
Accrued expense				
Ultimate parent company	138,244	-	138,244	-
Parent company	2,678,889	1,062,889	2,678,889	1,062,889
Other related parties	10,936,579	4,023,627	10,853,833	3,823,181
Total	13,753,712	5,086,516	13,670,966	4,886,070

Short-term loans to related parties

Short-term loans to associate and joint venture are due at call and bear interest rate at MLR and MLR - 1.25% per annum respectively. The movement of short-term loans to related parties for the year ended 31 December are as follows:

	Consolidated financial statements		Separate financial statements	
	2019 Baht	2018 Baht	2019 Baht	2018 Baht
As at 1 January	754,550,500	1,013,765,000	2,653,440,000	1,556,015,000
Additional	230,490,552	53,000,000	4,137,490,000	1,217,000,000
Received	(701,550,500)	(312,214,500)	(1,761,440,000)	(119,575,000)
As at 31 December	283,490,552	754,550,500	5,029,490,000	2,653,440,000

Key management compensation

Key management includes directors (executive and non-executive), members of the Executive Committee, the Company Secretary and the Head of Internal Audit. The compensation paid or payable to key management for employee services is shown below:

	Consolidated and Separate financial statements	
	2019 Baht	2018 Baht
Short-term benefits	54,247,246	48,776,634
Post-employment benefits	2,160,134	2,877,080
Total	56,407,380	51,653,714

29 Benefits from the Board of Investment of Thailand (BOI)

For the year ended 31 December 2019 and 2018, the Group has received the benefits from the BOI for public utilities and basis services production of water supply for industry, 5 certificates and basis services production of solar rooftop, 15 certificates.

Significant privileges consist of:

- 1) Tax exemption on the profit that the Company obtains (no more than 100% of the investment cost that is not include in land cost and working capital for a period of 8 years). If the Company has loss from the operation, BOI allows the Company to deduct the loss from the profit that might occur after BOI expiry date within 5 years. In addition, the Company can also choose to deduct the loss within one year or within multiple years.
- 2) The Group does not need to include dividend received from a BOI-promoted entity to calculate the income tax expenses during the exemption period.
- 3) Tax deduction (50% of normal rate) on net profit within 5 years after the end of the privilege period as mentioned in 1 above.
- 4) Double deduction on distribution, electricity, and water supply cost within 10 years starting from the date that the Group receives its first profit from the operation.
- 5) Deduction on investment cost for installation or construction (25% of investment cost) that is not included in the normal depreciation deduction.

As a promoted company, the Company must comply with certain conditions and restrictions provided for in the promotional certificates.

Services income for promoted and non-promoted activities for the years ended 31 December can be classified as follows:

	Consolidated financial statements					
	2019 (Baht '000)			2018 (Baht '000)		
	Promoted activity	Non-promoted activity	Total	Promoted activity	Non-promoted activity	Total
Sales income	256,662	1,383,117	1,639,779	245,129	1,277,974	1,523,103
Services income	5,371	212,098	217,469	-	185,182	185,182
	262,033	1,595,215	1,857,248	245,129	1,463,156	1,708,285

30 Events occurring after the reporting period

On 21 February 2020, the Company issued the debentures No. 1/2020 under the Medium Term Notes Program with the total principal amount of Baht 3,000 Million and has been approved for trading in debt securities market by The Securities and Exchange Commission on 7 February 2020. The issuance of this debenture has already been approved by virtue of the resolution of Extraordinary General (EGM) No. 1/2017 dated 30 June 2017 and the resolution of the 2018 Annual General Meeting (AGM) dated 27 April 2018.

DEFINITION AND ABBREVIATION

The Company or WHAUP	: WHA Utilities and Power Public Company Limited	GHW	: Glow Hemaraj Wind Company Limited
The Company Group	: WHA Utilities and Power Public Company Limited and its subsidiaries	WHA Gunkul 1	: WHA Gunkul 1 Green Solar Roof Company Limited
WHA	: WHA Corporation Public Company Limited	WHA Gunkul 3	: WHA Gunkul 3 Green Solar Roof Company Limited
WHA Group	: WHA Corporation Public Company Limited, subsidiaries and associated companies	WHA Gunkul 6	: WHA Gunkul 6 Green Solar Roof Company Limited
WHAID	: WHA Industrial Development Public Company Limited	WHA Gunkul 17	: WHA Gunkul 17 Green Solar Roof Company Limited
WHAID Group	: WHA Industrial Development Public Company Limited, subsidiaries and associated companies	WHA CIE 1	: WHA Chonburi Industrial Estate 1
WHAWT	: WHA Water Company Limited	WHA CIE 2	: WHA Chonburi Industrial Estate 2
WHAEG	: WHA Energy Company Limited	ESIE	: Eastern Seaboard Industrial Estate (Rayong)
WHAET	: WHA Energy 2 Company Limited	WHA ESIE 1	: WHA Eastern Seaboard Industrial Estate 1
WUPIN	: WHAUP International Company Limited	WHA ESIE 2	: WHA Eastern Seaboard Industrial Estate 2
WHASL	: WHA Solar Company Limited	WHA ESIE 3	: WHA Eastern Seaboard Industrial Estate 3
WUPS1	: WHAUP (SG) 1 PTE. Limited (A company incorporated in Singapore)	WHA ESIE 4	: WHA Eastern Seaboard Industrial Estate 4
WUPS2	: WHAUP (SG) 2 PTE. Limited (A company incorporated in Singapore)	WHA EIE	: WHA Eastern Industrial Estate (Map Ta Phut)
WUPSD	: WHAUP (SG) 2DR PTE. Limited (A company incorporated in Singapore)	WHA RIL	: WHA Rayong Industrial Land
WUPNA	: WHAUP Nghe An Joint Stock Company (A company incorporated in Vietnam)	WHA SIL	: WHA Saraburi Industrial Land
CUA LO	: Cua Lo Water Supply Joint Stock Company (A company incorporated in Vietnam)	WHA LP 1	: WHA Logistic Park 1
SDWTP	: Duong River Surface Water Plant Joint Stock Company (A company incorporated in Vietnam)	Utilities business	: Water business and providing related utilities service e.g. gas distribution business or waste management business
WHA NGD2	: WHA Eastern Seaboard NGD2 Company Limited	Water business	: Distribution of raw water, production and distribution of industrial water and wastewater treatment business
WHA NGD4	: WHA Eastern Seaboard NGD4 Company Limited	Power business	: Generation and distribution of electricity business
Gheco-I	: Gheco-I Company Limited	COD	: Commercial Operation Date
HHTC	: Houay Ho Thai Company Limited	SCOD	: Scheduled Commercial Operation Date
HHPC	: Houay Ho Power Company Limited (A company incorporated in Lao People's Democratic Republic)	MW	: Megawatt
GIPP	: Glow IPP Company Limited	TPH	: Ton per hour
BPWAH-1	: B.Grimm Power (WHA) 1 Company Limited	RT	: Ton of Refrigeration
Gulf JP NLL	: Gulf JP NLL Company Limited	IPP	: Independent Power Producer
Gulf NLL 2	: Gulf NLL 2 Company Limited	SPP	: Small Power Producer
Gulf TS 1	: Gulf TS 1 Company Limited	VSPP	: Very Small Power Producer
Gulf TS 2	: Gulf TS 2 Company Limited	IEAT	: Industrial Estate Authority of Thailand
Gulf TS 3	: Gulf TS 3 Company Limited	ERC	: Energy Regulatory Commission
Gulf TS 4	: Gulf TS 4 Company Limited	NEPO	: National Energy Policy Office
Gulf VTP	: Gulf VTP Company Limited	EGAT	: Electricity Generating Authority of Thailand
Gulf Solar	: Gulf Solar Company Limited	PEA	: Provincial Electric Authority
Gulf Solar BV	: Gulf Solar BV Company Limited	MEA	: Metropolitan Electric Authority
Gulf Solar TS 1	: Gulf Solar TS 1 Company Limited	PWA	: Provincial Waterworks Authority
Gulf Solar TS 2	: Gulf Solar TS 2 Company Limited	MWA	: Metropolitan Waterworks Authority
Gulf Solar KKS	: Gulf Solar KKS Company Limited	Office of the SEC	: Office of the Securities and Exchange Commission of Thailand
Gulf WHA MT	: Gulf WHA MT Natural Gas Distribution Company Limited	SET	: Stock Exchange of Thailand
Gulf MP	: Gulf MP Company Limited	BOI	: Board of Investment of Thailand
ESCE	: Eastern Seaboard Clean Energy Company Limited	EBITDA	: Earnings before interest, taxes, depreciation and amortization
CCE	: Chonburi Clean Energy Company Limited	CAGR	: Cumulative Annual Growth Rate
RCE	: Rayong Clean Energy Company Limited	Glow Group	: Glow Energy 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



WHA UTILITIES & POWER PUBLIC COMPANY LIMITED.
HEAD OFFICE

24th Floor, UM Tower 9 Ramkhamhaeng Road,
Suanlaung, Bangkok 10250, Thailand
Tel : (662) 719-9559 Fax : (662) 717-2128



www.wha-up.com