SUSTAINABILITY REPORT 2019

WHA GROUP

Sustainability

WHA CORPORATION PUBLIC COMPANY LIMITED

CONTENT

Message from Chairman and Group CEO

Sustainable development has been taking huge role in the global development trend and Thailand has adopted such concept in the national development plan in order to balance the achievement in terms of human resource, society, economic, and the environment.

During the past years, WHA Group has taken important role in supporting and promoting the country's competitiveness, as well as bringing the long-term stability and prosperity to the country and its population as a whole. This includes the Group's commitment to operate the business on the basis of sustainable development by driving the business whilst balancing the Group's responsibility in three areas, which are environmental, social, and governance aspect.

The year 2019 is an important year for the Group, as it is not only the year to celebrate the past success, but also a year to inspire the Group to look forward to and be ready for future challenges and opportunities to grow while being part of the country's effort in achieving Sustainable Development Goals. The effort will be achieved through the Group's four main business units, which are logistics, industrial development, utilities and power, and digital platform.

Part of the previous year achievement was the Group's partnership with Glow Energy Public Company Limited and Suez Group to develop an industrial waste to energy power plant with the capacity of 8.63 megawatts. The initiative supports non-hazardous industrial waste disposal up to 400 tons per day or 100,000 tons per year by converting waste to fuel the power generation in the environmental-friendly manner. Besides, one of the Group's industrial estate, WHA Industrial Estate Rayong (WHA IER), also received the Smart Industrial Estate (Smart IE) certificate under the 'New City' category for being the committed industrial estate that applies technology and innovation to drive sustainable urban development that aligns with the intelligent industrial town and environment-friendly concept.

In addition, the Group promotes the use of solar power which is a clean alternative energy through WHA Utilities and Power Public Company Limited. The solar energy promotion plan includes expansion and investment in the installation of solar rooftop power generator system to the factories in the industrial estates to increase the capacity to 50 megawatts from the current capacity of 35 megawatts. Furthermore, the Company continues the success of the water treatment project using constructed wetland principle to treat wastewater up to 400 cubic-meters under the concept of 'Clean Water for Planet'. The project is one of the Group's social responsibility programs to improve water quality and promote the surrounding communities' access to clean and safe water resources as well as cultivating the awareness of the community people to take care of water sources.

The Group's commitment to laws and regulation compliance and ethical values, together with extensive and consistent consideration of its responsibility towards stakeholders contributes to the Group's success and reputation. The Group received, for example, 'excellent level' classification from the corporate governance assessment of the listed companies, nine consecutive years of Excellence Gold level from AMCHAM CSR award, Industrial Estate Authority of Thailand's Eco-Industrial Town Award, etc. The Group prioritizes human resource development as the heart of the achievement and therefore focuses on developing quality employee who are able to adapt to changing trend of 21st century which will benefits the employee themselves, the organization, and the country. To do this, the Group arranged various development programs, for example, Advanced Business Development Program, Leadership Development Program, WHA Innovation Leader Program which was a joint development program with the country's leading universities, etc.

Regarding future strategy, the Group will strive to deliver sustainable value by adhering to the balanced business principle. The Group will continue to take a crucial role to drive the country's economy while ensuring environmental, social and good governance responsibilities which will benefit the general public and promote Thailand's achievement in contribution to the global sustainable development goals.

Awards and Membership

Awards

Golden Trowel Award 2019 for the smoothest floor

WHA Group received Golden Trowel Award 2019 for the smoothest floor in the Elevate Slab on Pile category for WHA E-Commerce Park

Eco Industrial Town Awards

4 of WHA industrial estates received Eco Industrial Town Awards in the Eco-Champion category from Eco Innovation Forum 2019. The awards shows the Group's commitment to drive sustainability through smart and environment-friendly business development concept.

People's Choice Award and AMCHAM CSR Excellence Recognition 2019 (ACE Recognition)

WHA Group received People's Choice Award which is a special award. The Group also received "Platinum" 2019 recognition for its tenth consecutive year to receive the award. This reflects the Group's commitment to conduct the business along with supporting Thailand's social development.

Smart Industrial Estate Recognition

WHA Industrial Estate Rayong (IER) received Smart Industrial Estate Recognition in the 'New City' category for driving sustainable city development using technology and innovations that is in line with the government's Thailand 4.0 Initiative.

Membership

1	American Chamber of Commerce (AMCHAM)
2	The Australian-Thai Chamber of Commerce
3	British Chamber of Commerce Thailand
4	German-Thai Chamber of Commerce
5	European Association for Business and Commerce (EABC)
6	Franco-Thai Chamber of Commerce
7	Japanese Chamber of Commerce
8	Malaysian-Thai Chamber of Commerce
9	New Zealand-Thai Chamber of Commerce
10	Singapore-Thai Chamber of Commerce
11	South Africa-Thai Chamber of Commerce
12	The Thai Chamber of Commerce
13	Thai-Vietnam Business Council
14	Thai-Chinese Chamber of Commerce
15	Thai-Italian Chamber of Commerce
16	The Danish-Thai Chamber of Commerce
17	Automotive Focus Group
18	Thai-European Business Association
19	Thai Industrial Estate and Strategic Partner Association
20	The Federation of Thai Industries
21	The Federation of Thai Industries, Rayong
22	Thai Autoparts Manufacturers Association

About This Report

WHA Corporation Public Company Limited (WHA Group) prepares sustainability report annually to disclose the Group's management approach and performance of the material topics in terms of economic, governance, social, and the environment aspects that are significant to WHA Group's operations and important to its stakeholders. In addition, the report aims to report WHA Group's progress and performance which support the United Nations Sustainable Development Goals (SDGs).

This report is WHA Group's first sustainability report, which has been prepared in accordance with the Global Reporting Initiatives (GRI) Standards for Core option. The reporting boundary of this report covers all of WHA Group's business operations and its subsidiaries that are located in Thailand, and that WHA Group holds greater than 50 percent of the total share and has management control. The reporting period is from January 1st to December 31st, 2019.

This report did not receive third party verification, but the contents and data in this report were reviewed and approved by management level of related division to ensure accuracy of reporting content and data.

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About WHA Group

WHA Group was initiated in 2003 by a group of forward-thinking entrepreneurs involved in Logistics properties development business that is well-constructed warehouses with premium quality to match customer requirements and response to growing demand of both existing and new customers seeking for custom Built-to-Suit and Warehouse Farm project which is a mixed project type between high standards Built-to-Suit and Ready-Built. In 2012, through sustained efforts of the Group's management team, WHA Corporation Public Company Limited was listed on the Stock Exchange of Thailand (SET). The Group then acquired WHA Industrial Development Plc. (formerly known as Hemaraj Land and Development Plc.), Thailand's largest and leading industrial estate developer, utilities & power and property solutions in 2015. Later in 2017, one of the Group's company, WHA Utilities & Power Public Company Limited (WHAUP), the leader of utilities and power services for the industrial estate, was also listed on the Stock Exchange of Thailand. The expansion invigorated WHA Group resources to be "the ultimate solution partners" of local and international investors, enabling them to operate with maximum efficiency.

Today, WHA Group has become a leading player in logistics, industrial estates, utilities and power and digital services, both in Thailand and Southeast Asia.

Vision

Be recognized as a market leader in aligning vertical integrated logistics facilities provider, total solution industrial estates, utilities, power, and digital infrastructure platforms of high-quality capturing throughout value chain in Asia.

Mission

- Fulfill requirement of the key major business partners, shareholders and stakeholders
- Focused on innovative and effective strategic, business, finance, service quality, safety, environment, community, and governance disciplines.
- Create a last-long relationship with strategic alliance
- Provide unrivalled quality products with knowledge and expertise leading to win-win solution
- Maintain financial discipline to maximize return on equity
- Develop world class logistics facilities, industrial estates, utilities, power and property customer solutions
- Differentiate comprehensive platform for both infrastructure data center as well as customized service solutions for leading MNCs and Thai conglomerates
- Develop, engage talent and experience team and enhance organizational core competency

WHA's Group Culture and Values

Advance

To be initiative and proactively work to inspire, create, or adjust practical concept, means, or be innovative in order to fulfill customers' requirement and organizational goal.

Champion

To achieve success, which results in business excellence.

Resourceful

To build relationship with customers as a consultant and provide professional advice.

Partnership

To reinforce lasting relationship and build trust as a business alliance with customers and partners, and reinforce internal favorable relationship in order to attain the organizational goal together.

Integrity

To cultivate and develop trust and confidence from customers with transparent working culture, adhere to promise, sincerity, diligent, ethical and socially responsible.

WHA Group Business

NUMBER 1 LOGISTIC FACILITIES DEVELOPER

offering a variety of premium facilities uniquely servicing our clients' needs

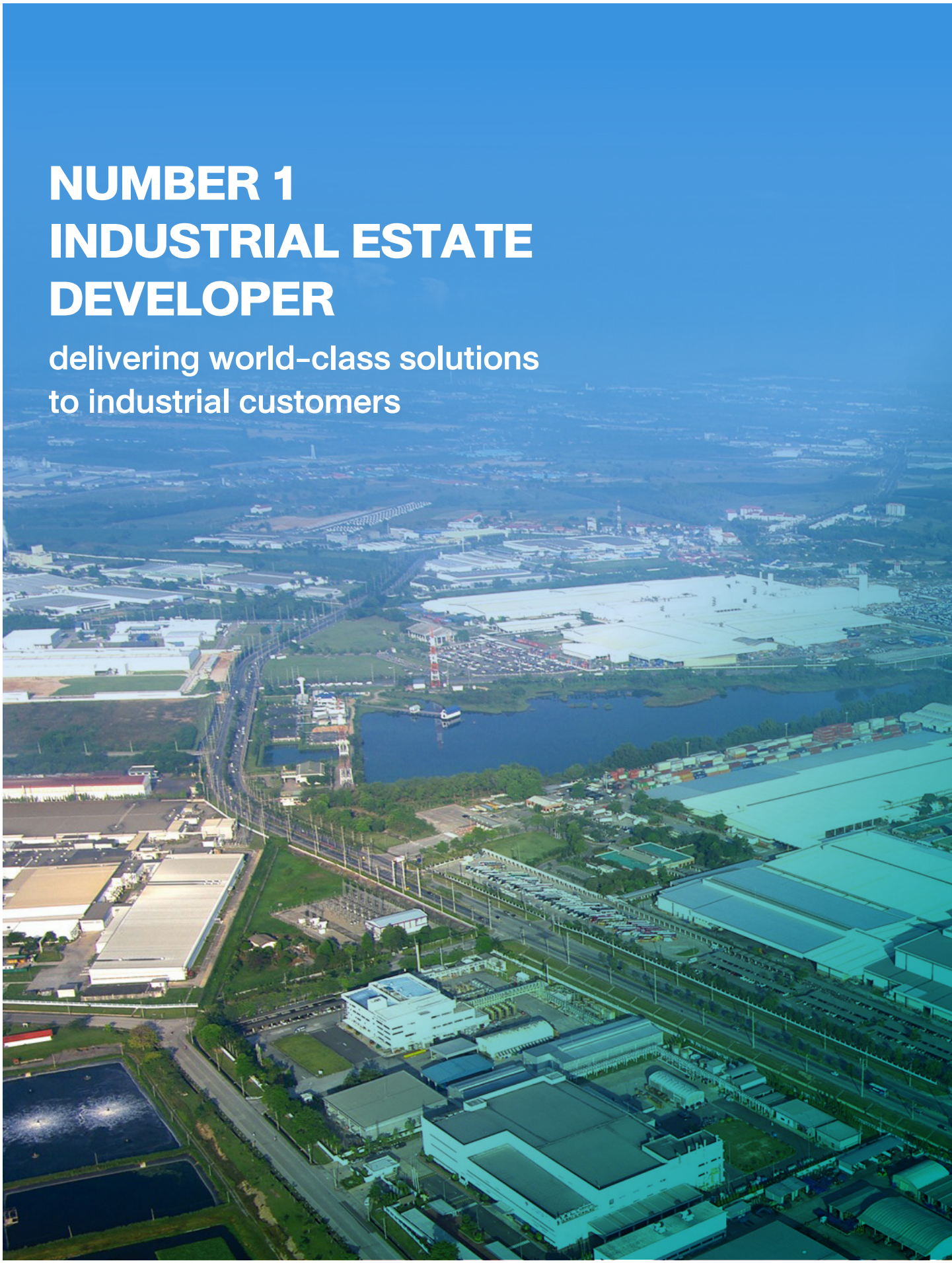
LOGISTICS & INDUSTRIAL PROPERTIES

The Company is committed to be a leading company as a warehouse project developer, distribution center, and high quality factory located in a strategic location around Bangkok, Eastern Economic Corridor, and other provinces.

The Company is able to fully meet the needs of its customers due to its project location, project design with international standards and quality of construction. This could reduce the cost of customer operations and increase logn-term competitive advantages.

NUMBER 1 INDUSTRIAL ESTATE DEVELOPER

delivering world-class solutions to industrial customers



Industrial Development

Industrial Development Hub is operated through the Company's subsidiary, WHAID Group, responsible for developing industrial estates and/ or zones and selling of land to enterprises who demand to make their investment in industrial estates / zones and industrial promotional zones. Enterprises can gain special privileges provided by Industrial Estate Authority of Thailand and / or Thailand Board of Investment. Another crucial role of WHAID Group is to act as a center for providing utilities and facilities for clients inside the industrial estates/ zones e.g. electricity, water supply, wastewater treatment, waste disposal, telephone, internet and coordinating with the authority on environmental control.

11
OPERATING
INDUSTRIAL ESTATES / ZONES AND OTHERS IN PIPELINE

816[/1] **RAI**
LAND SALES
[/1]excluding LOI and MOU in Thailand and Vietnam

REAL ESTATE DEVELOPMENT OVER
52,000[/2] **RAI**
[/2]including total Project Area of WHA Industrial Zone 1- Nghe An Vietnam Phase 1 of 3,110 Rai

NEW OPERATING
WHA ESIE 3
INDUSTRIAL ESTATES IN **EEC**

INTEGRATED INDUSTRIAL UTILITIES & POWER

provider with solid business growth

Utilities & Power

Utilities & Power Hub is operated through the Company's subsidiary,WHAUP Group, the provider of utilities in the WHAID Group's industrial estates/ zones i.e. raw water, industrial water, and wastewater treatment. WHAUP Group also has investments in power businesses, through joint ventures with both domestic and foreign power plants, who have expertisein the power business field. Our power plants include both Conventional Fuel and Renewable Energy power plants.

110 MILLION M³
OF UTILITIES AND SALES MANAGEMENT VOLUME

INITIATIVE OF VALUE ADDED PRODUCTS VIA TECHNOLOGY AND INNOVATION SUCH AS DEMINERALIZED WATER

POWER CAPACITY INCREASED TO
559
EQUITY MW

PARTNERSHIP WITH BUSINESS ALLIES **COD**
WASTE TO ENERGY POWER PLANT
CCE

DIGITAL PLATFORM

Providing a digital platform solution for leading companies. This fully-integrated and supported initiative adds value to WHA group.

Digital Platform

Digital Platform Hub is operated through the Company's subsidiary, WHA infonite Company Limited, which was granted NBTC internet services (type 1), providing co-location data centers, fiber optic network (FTTx) and also managed services.

4 DATA CENTERS
WITH TIER III AND IV STANDARD COMMENCED OPERATION
WITH 459 EQUITY RACKS

7 FTTx IN
INDUSTRIAL ESTATES COMMENCED OPERATION

PARTNERSHIP
WITH MULTIPLE INTENATIONAL COMPANIES

WHA Group's Value Chain

Business Hubs	Upstream
Logistics Hub 	• Land acquisition • Property development • Project development
Industrial Development Hub 	
Utilities & Power Hub 	• Raw Water Procurement • Fuel and solar panel procurement
Digital Platform Hub 	• IT product and service procurement

Operations	Downstream
• Warehouse leasing and sale • Asset management	• Maintenance • Customer service
• Industrial plot sale • Asset service management	
• Water production • Wastewater treatment • Power production • Solar rooftop installation	
• Data Center service and solution management • Network service management • Managed services and solutions management	

Location

WHA 50+

STRATEGIC LOCATION IN THAILAND

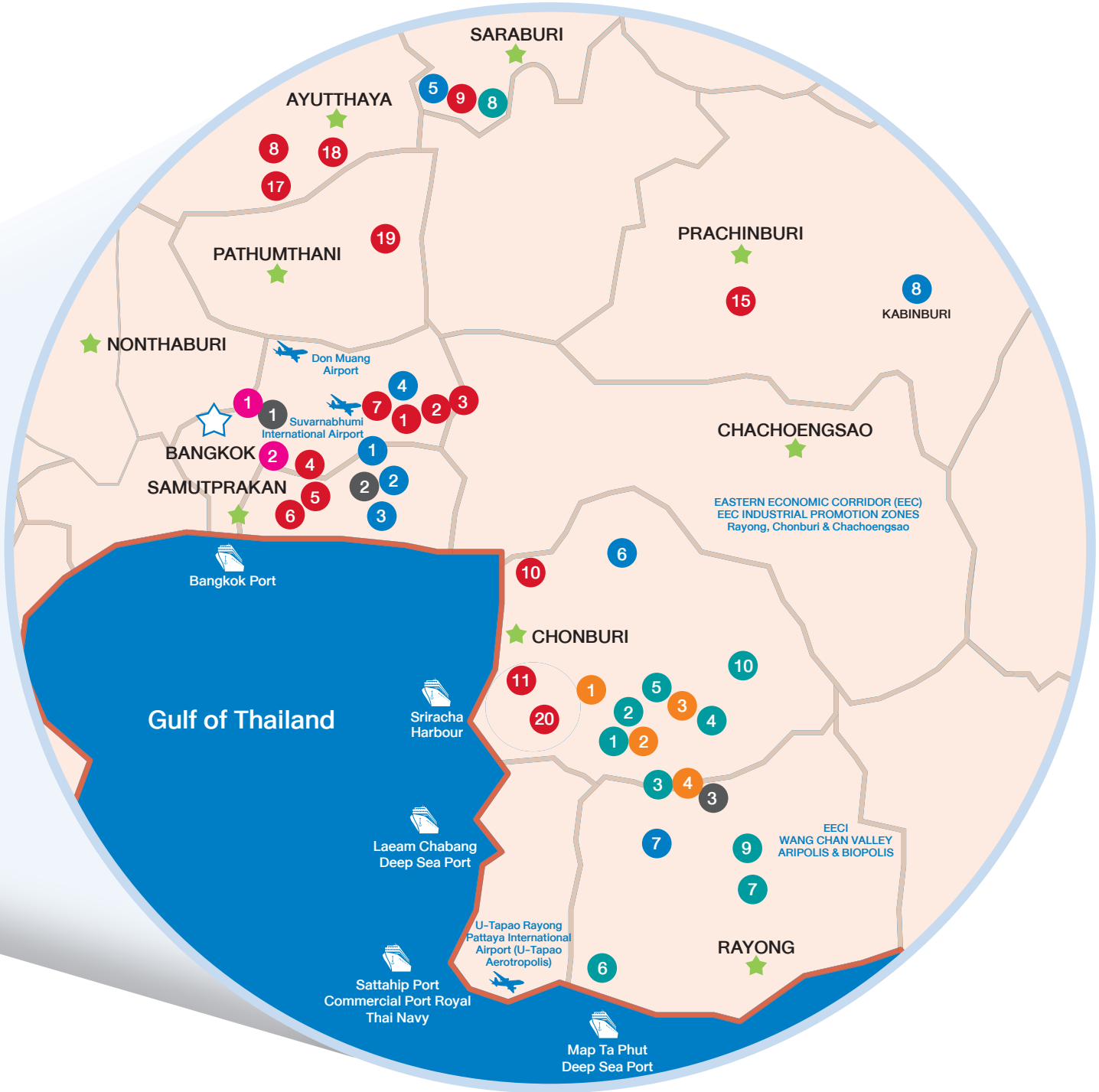
WHA is a key player in the development of the Eastern Economic Corridor (EEC).

WAREHOUSE FARM

1. WHA Mega Logistics Center Bangna-Trad km.18
2. WHA Mega Logistics Center Bangna-Trad km.19
3. WHA Mega Logistics Center Bangna-Trad km.23 (2 Phases)
4. WHA Mega Logistics Center Chonlaharnpichit km.3 (2 Phases)
5. WHA Mega Logistics Center Chonlaharnpichit km.4
6. WHA Mega Logistics Center Chonlaharnpichit km.5
7. WHA Mega Logistics Center Ladkrabang
8. WHA Mega Logistics Center Wangnoi 61
9. WHA Mega Logistics Center Saraburi
10. WHA Mega Logistics Center Panthong, Chonburi (2 Phases)
11. WHA Mega Logistics Center Laemchabang
12. WHA Mega Logistics Center Rama II, km.35
13. WHA Mega Logistics Center Lampoon
14. WHA Mega Logistics Center Khon Kaen
15. WHA Mega Logistics Center Kabinburi
16. WHA Mega Logistics Center Suratthani
17. WHA Mega Logistics Centers Wangnoi 61 Phase 2
18. WHA CENTRAL Mega Logistics Center Wangnoi 63
19. WHA Mega Logistics Center Lum Luk Ka
20. WHA Mega Logistics Center Laemchabang 2

BUILT-TO-SUIT FACTORIES AND WAREHOUSES

1. Consumer Goods Distribution Center
2. Healthcare Air-Con Distribution Center
3. Hazardous Goods Distribution Center
4. Ladkrabang Logistics Center (2 Phases)
5. Diaper Manufacturing
6. Consumer Goods Distribution Center
7. Aerospace Manufacturing
   - Motorbike Manufacturing
   - Automation & Robotics
   - Aerospace Factory
8. WHA Ready Bulit Factory Park 1 @Hi-tech Kabin



INDUSTRIAL ESTATES/LANDS

1. WHA Chonburi Industrial Estate 1 (WHA CIE 1)
2. WHA Chonburi Industrial Estate 2 (WHA CIE 2)
3. Eastern Seaboard Industrial Estate (Rayong) (ESIE)
4. WHA Eastern Seaboard Industrial Estate 1 (WHA ESIE 1)
5. WHA Eastern Seaboard Industrial Estate 2 (WHA ESIE 2)
6. WHA Eastern Industrial Estate (Map Ta Phut) (WHA EIE)
7. WHA Rayong Industrial Land (WHA RIL)
8. WHA Saraburi Industrial Land (WHA SIL)
9. WHA Eastern Seaboard Industrial Estate 4 (WHA ESIE 4)
10. WHA Eastern Seaboard Industrial Estate 3 (WHA ESIE 3)
11. WHA Industrial Zone 1 - Nghe An Vietnam

WHA LOGISTICS PARKS

1. WHA Logistics Park 1 (WHA LP 1)
2. WHA Logistics Park 2 (WHA LP 2)
3. WHA Logistics Park 3 (WHA LP 3)
4. WHA Logistics Park 4 (WHA LP 4)

DIGITAL PLATFORM

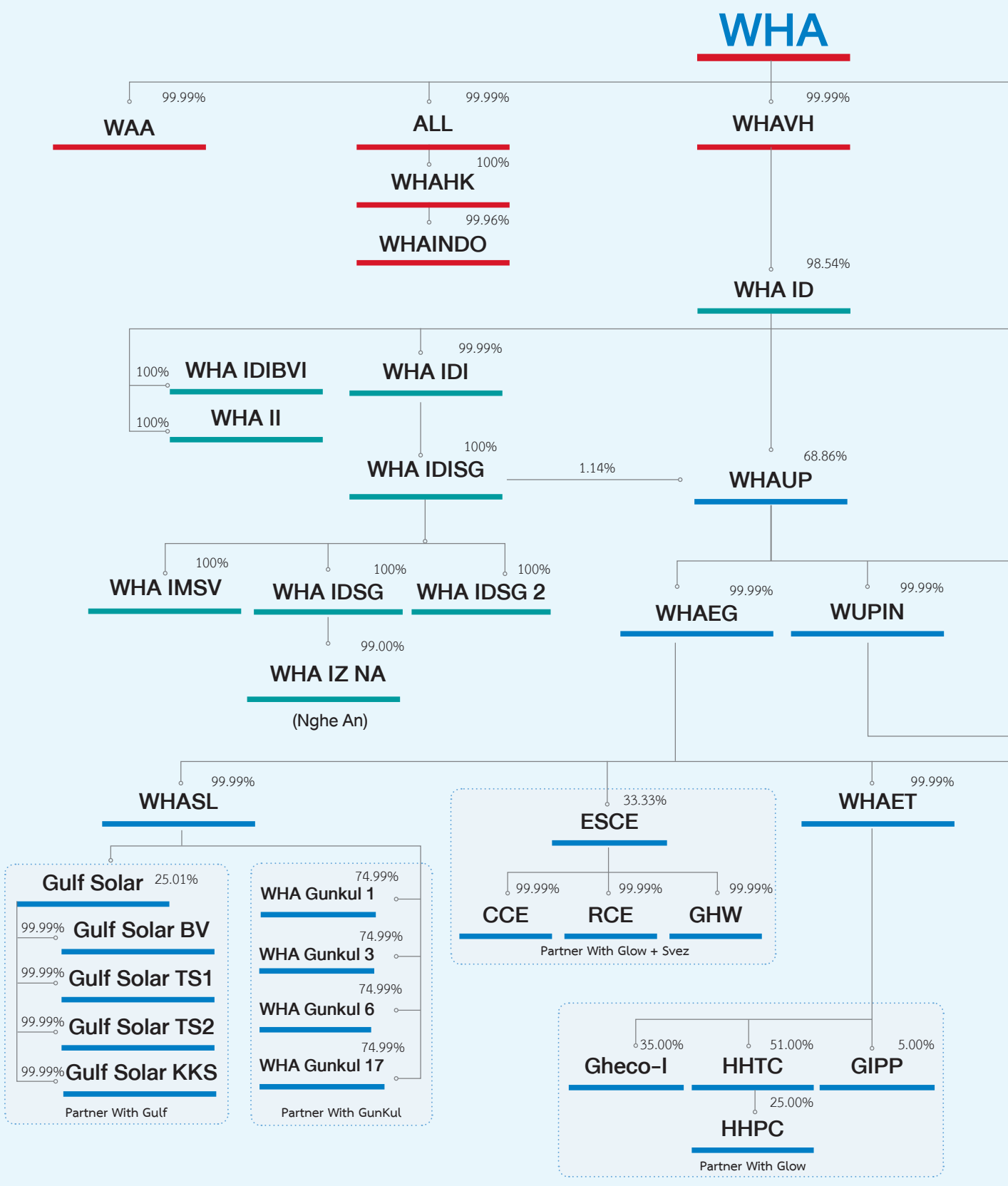
1. WHA Mega Center Vibhavadi-Rangsit
2. WHA Mega Center Bangna-Trad
3. WHA Mega Center Eastern Seaboard

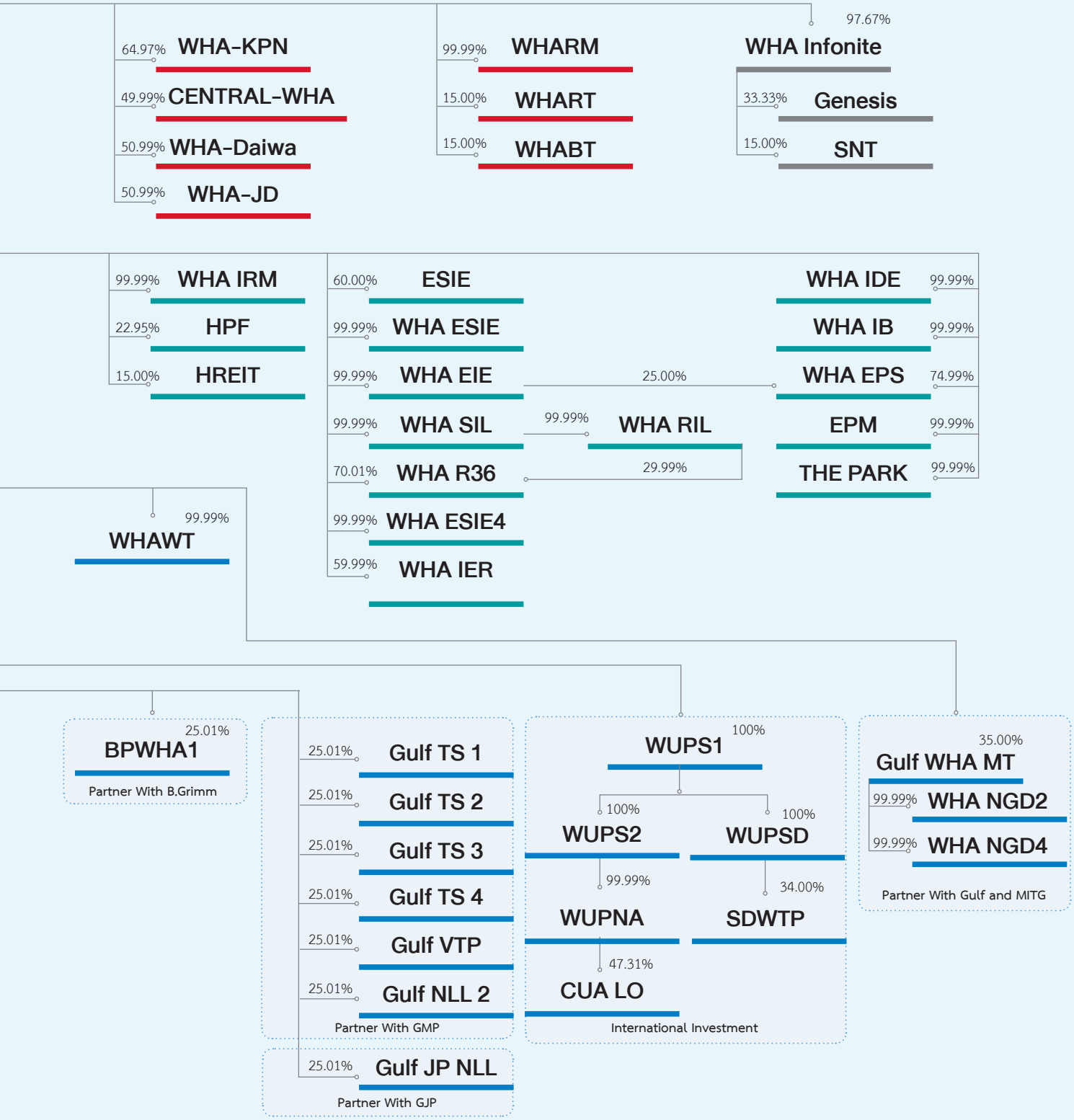
BUSINESS COMPLEX

1. SJ Infonite / Business Complex
2. Bangna-Trad Business Complex

Group Shareholding Structure

WHA Group shareholding structure as of 31st December 2019

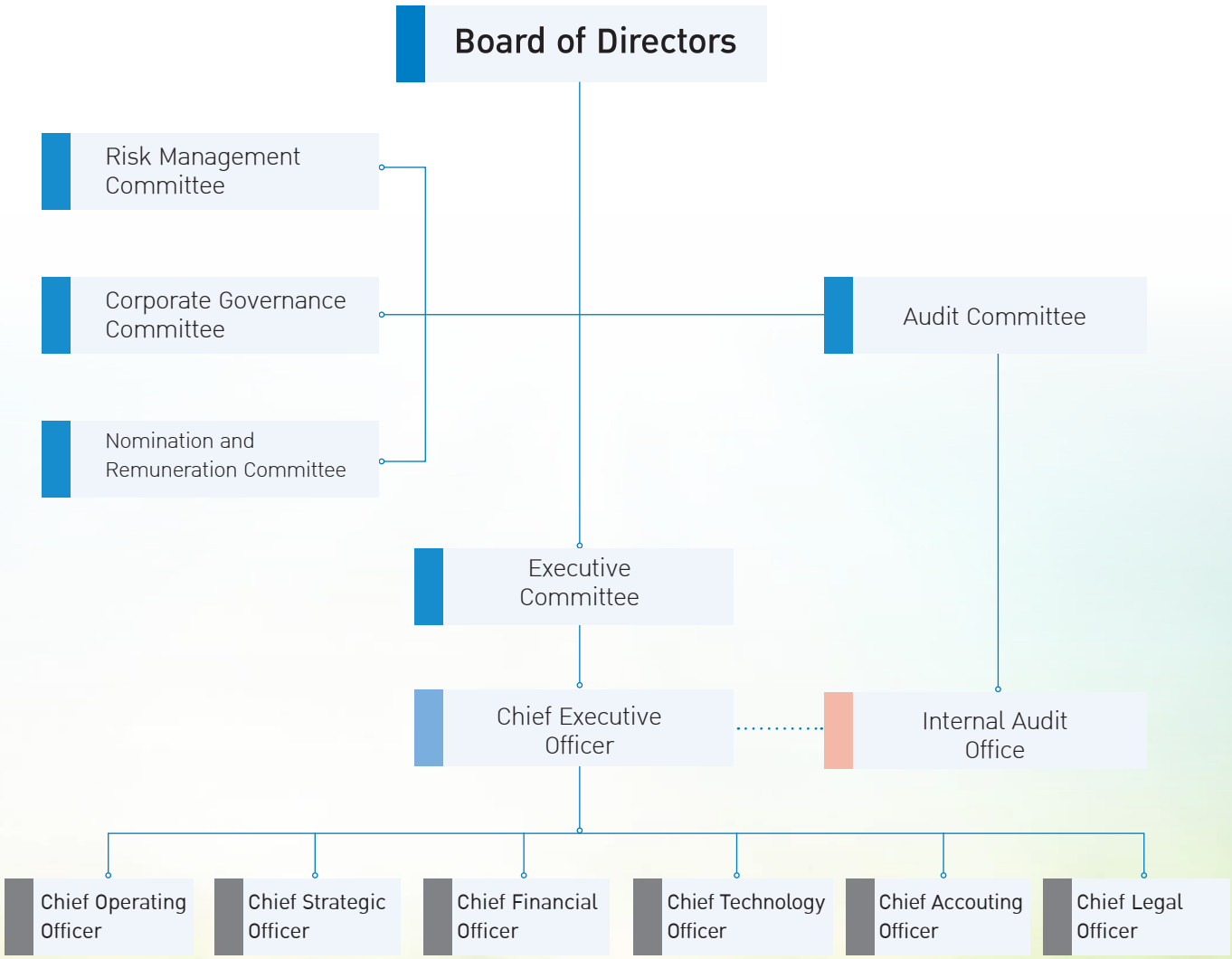



64.97% WHA-KPN
49.99% CENTRAL-WHA
50.99% WHA-Daiwa
50.99% WHA-JD
99.99% WHARM
15.00% WHART
15.00% WHABT
97.67% WHA Infonite
33.33% Genesis
15.00% SNT
99.99% WHA IRM
22.95% HPF
15.00% HREIT
60.00% ESIE
99.99% WHA ESIE
99.99% WHA EIE
99.99% WHA SIL
70.01% WHA R36
99.99% WHA ESIE4
59.99% WHA IER
25.00%
99.99% WHA RIL
29.99%
WHA IDE 99.99%
WHA IB 99.99%
WHA EPS 74.99%
EPM 99.99%
THE PARK 99.99%
99.99% WHAWT
25.01% BPWHA1
Partner With B.Grimm
25.01% Gulf TS 1
25.01% Gulf TS 2
25.01% Gulf TS 3
25.01% Gulf TS 4
25.01% Gulf VTP
25.01% Gulf NLL 2
Partner With GMP
25.01% Gulf JP NLL
Partner With GJP
100% WUPS1
100% WUPS2
100% WUPSD
99.99%
34.00%
WUPNA
SDWTP
47.31%
CUA LO
International Investment
35.00% Gulf WHA MT
99.99% WHA NGD2
99.99% WHA NGD4
Partner With Gulf and MITG

Organization Structure

WHA Group's corporate governance structure consists of the Board of Directors and 5 subcommittees which are:

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



Risk and Opportunities

In 2019, WHA Group identified key risks and opportunities consisting of business risks and emerging risks that related to the Group's sustainability management as follows:

Changes in Economy, Domestic Politics, and Other Macro Factors

As many of WHA Group's clients are transnational companies, the economic changes in global and national level have an effect on the client's and the Group's revenue. The uncertainties may affect the Group especially the policies relating to the investment promotion and the industrial area development.

Nevertheless, Thailand remains attractive to foreign investors who wants to invest in South East Asia. This is due to the quality of the labor and acceptable wage rate compared to other Asian countries, Europe, or the United States. Furthermore, the US and China Trade War has benefit the Group as many manufacturers in China decides to relocate their operations to Thailand which has good infrastructure and utilities. Besides, Thai Government also supports the investment policy on Eastern Economic Corridor (EEC) which promotes the growth of domestic investment.

WHA Group is also benefitted from the economy uncertainties as business and investors tend to lease or outsource supporting business activities. During the tine of economic and political uncertainties, WHA Group continues to grow. This can be seen from the expansion of revenue source (not relying on single business), the steady revenue from property rent and utilities service, and the increasing number of clients in the 11 industrial estates of WHA Group.

Competition of Industrial Estate and Property Development Business

Currently, more industrial estate and property developers are constructing factories and warehouses for rent similar to WHA Group's business. This increase the competition in industrial estate and property development competition. However, most of the competitors are providing ready-built factories and warehouses and mostly serve their customers within their industrial estates. Meanwhile, WHA Group is focusing on 'built to suit' scheme that offers high quality designs to respond to each client's needs. In addition, WHA Group uses its expertise to design built to suit projects and develop the projects under the concept of Warehouse Farm to enable the service to specific customers' needs such as area reserving for future expansion. Ready built warehouse is also available for prompt response to new clients. In addition, the good location of the Group's logistics properties also serves the clients' needs in terms of transportation and distribution.

Overall, there are still few built to suit providers in Thailand since the business requires expertise and detail orientation to understand and response to client's requirement along with large amount of investment fund. The Group therefore continues to develop and improve the quality of the warehouse services.

Climate Change Impact and Natural Disasters

Climate change impacts and natural disasters such as floods and drought may disrupt WHA Groups business or cause damages to the Group's properties and loss of life of the employees. In addition, the natural disasters can also affect the clients who rent the Group's properties or invest in WHA Group's industrial estates. The Group is aware of such risks and therefore set up preventive and mitigation measures.
WHA Group puts great attention to the selection of project location and ensure appropriate security system. The buildings are raised higher than the road level and the projects infrastructure are assessed and designed with flood barriers. In addition, the Group conducted geological study of the local environment, strengthened the earth dykes and expanded the drainage system to lower the risk.

On the other hand, drought has prevalent impact on the Group business in 2020 especially in the area of Chonburi, Rayong, and Saraburi provinces. Public sector, private sector and WHA Group has been developing mitigating measures to reassure the investors of the sufficient water supply. In addition, the Group is considering building water pond within the Group's premises to mitigate future impact and has improved water plumbing network while increase the volume of reuse and reclamation water to reduce raw water withdrawal and preserve the water resource.

Reliance on the some Industries

The Group is aware of the risk on its revenue and land sale if these industries are affected by the macro economy and delay their investment in the future.

WHA Group therefore developed marketing plan to diversify the investors group, not to rely on single industry. Each of the 10 industrial estates and industrial zones will target different industry such as electronics, energy, steel, construction materials, logistics, food, etc. The Group also regularly monitors and analyzes the investment proportion of different industries in order to adjust the Group's strategies accordingly. In addition, the Eastern Economic Corridor (EEC) which is Thailand 4.0 strategic plan has showed significant progress to uplifting the EEC area into "World Class Economic Zone" to support Super Cluster investment and the country's targeting industries. This benefits the Group with the expansion and development of the industrial estate business in Vietnam; enhancing business opportunities and diversify the Group's customer base.

Technology Disruptions

Nowadays, many businesses have been replaced with the use of new technology. As a result, businesses that are not able to adapt to the changes are affected and cannot continue its business. WHA Group recognizes the changes and is less affected sue to the diverse business. The Group sees technology as a tools to promote the Group to develop sustainably and therefore places importance on applying technology in the business such as studying the feasibility of 5 G technology for WHA Group's business. This is to prepare for changes in future industry trends which tools and devices will be synced and the broad use of wireless communication technology such as use of robots in the factory, automated warehouse management, and use of drones or sensor devices to assist works.

WHA Group has applied for regulatory sandbox in three of WHA industrial estates that have largest areas. The Group also encourages employees to develop their knowledge to the changes and cultivates creativity and initiative attitude. In addition, the Group plans to expand the business under "Digital Transformation" plan to involve future technology and create new business opportunities to serve the clients and business partners. The Group aims to complete the Digital Transformation plan by 2022.

Stakeholders

WHA Group recognizes the importance of all groups of stakeholders, which may have direct or indirect influence on the Group's business operations, and regularly engages with the stakeholders in order to hear and understand their concerns and expectations. In order to effectively engage with the stakeholders, WHA Group identifies the related stakeholders in its value chain considering the impact and influence of the stakeholders on the Group activities and vice versa. The Group has identified seven groups of key stakeholders, which are employee, shareholder, customer, supplier and creditor, competitor, government and regulator, and community.

Stakeholder Engagement

Employee

Engagement Channels and Frequency	Topics of Interests	Actions and Response
• Various all-time communication channels i.e. e-mail, supervisor, intranet, etc. • Annual CEO townhall • Quarterly Executive Sharing • Annual employee satisfaction and engagement survey • Suggestion box • Whistle blower channel	• WHA Group Outlook	• Update the performance and business outlook
	• News update and knowledge sharing	• Communicate and sharing updated situation and share the executive knowledge
	• Training and career development program	• Develop and provide suitable training programs
	• Work environment	• Communicate on corporate values and strategy
	• Compensation, welfare and benefits	• Regularly review and improve employee compensation and benefits
	• Management of occupational health and safety	• Promote good occupational health and safety culture

Shareholder / Investor

Engagement Channels and Frequency	Topics of Interests	Actions and Response
• Annual General Meeting • Annual report • Roadshow • Analyst meeting • Outlook meeting • Investor site visit • Opportunity Day • Various all time communication channels i.e. telephone, e-mail, website, etc.	• Business performance, such as returns, benefits, profits	• Improving business competitiveness and business direction to be up to date
	• Business transparency	• Ensure good corporate governance • Take part in Thai CAC
	• Changes in business management and business risk	• Conduct enterprise risk management and establish short -and long-term plan
	• Sustainability performance	• Manage sustainability material topics • Ensure environment and social compliance • Promote innovation and sustainability initiatives

Customer

Engagement Channels and Frequency	Topics of Interests	Actions and Response
• Roadshow / marketing events • Business meeting (quarterly) • Annual customer satisfaction survey • Customer clubs (quarterly) • WHA Connect magazines (quarterly) • Various all time communication channels i.e. telephone, e-mail, key contact personnel, etc.	• Product and service inquiry	• Provide product and service information on website and other media • Provide prompt respond to customer's inquiry
	• Quality of after sale services	• Establish effective customer relationship management • Continuously improve customer relationship management from customer's comments / suggestions
	• Environment management compliance and standards	• Strictly comply with related laws and regulations and apply international environmental management standards where possible
	• Risk and crisis management	• Conduct risk and crisis assessment and implement appropriate mitigating actions • Inform customers of relevant risks and crisis management plan and measures

Supplier and Creditor

Engagement Channels and Frequency	Topics of Interests	Actions and Response
• Supplier event • Supplier site visit • Telephone • E-mail	• Transparency in procurement process	• Develop procurement policy and procedure
	• Business opportunities and collaboration	• Conduct suppliers meet customers day
	• Compliance with WHA Group's standard	• Communicate on WHA Group's procurement policy • Conduct supplier assessment and provide feedback / corrective action plan to guide suppliers for improvement
	• On-time payment and following the contract agreement	• Follow the contract agreement • Disclose information according to the agreed condition

Competitor

Engagement Channels and Frequency	Topics of Interests	Actions and Response
• Business agent • Industry association meeting • Telephone • E-mail	• Partnership opportunity	• Collaborate in industry initiatives
	• Fair business competition	• Ensure implementation and communication of business code of conduct

Government / Regulator

Engagement Channels and Frequency	Topics of Interests	Actions and Response
• Meeting on occasion • Telephone • E-mail	• Regulatory compliance	• Strictly comply with relevant laws and regulations
	• Stakeholder impact management	• Effective stakeholder engagement
	• Corporate governance and transparency	• Ensure good corporate governance and implementation of business code of conduct

Community

Engagement Channels and Frequency	Topics of Interests	Actions and Response
• Public hearing and meeting • Community activities • Community engagement survey • Local community representatives	• Business operation impact on community's well-being e.g. traffic jam, safety, water withdrawal	• Conduct regular community feedback survey to ensure there's no impact on local community • Implement mitigating actions where business operation activities affect community's well-being e.g. use of smart traffic management to improve traffic problem • Involve surrounding communities in crisis management and emergency drill
	• Environmental management performance	• Ensure compliance with environmental related laws and standards
	• Community development and support	• Initiate community development programs regularly • Share WHA Group's expertise with local communities
	• Community engagement	• Provide effective and prompt respond to community complaints • Conduct community meeting to understand community's needs and suggestions

Materiality

WHA Group identified sustainability topics based on internal and external factors covering economic, social and environmental aspects that have influence or impact on the Group's operation and the stakeholders. The sustainability topics are then assessed and prioritized based on the materiality assessment framework of the Global Reporting Initiative (GRI) Standard, while addressing stakeholders' expectations, corporate risk management, and global trends.

Materiality Assessment Process

1. Identification

WHA Group identified its 2019 sustainability material topics by analysing internal factors which are business strategic direction and corporate risk profile whilst considering external factors including United Nation Sustainable Development Goals (UN SDGs), global trends relating to WHA Group's four main business as well as stakeholders' interests to ensure effective management and benefits for all stakeholders.

2. Prioritization

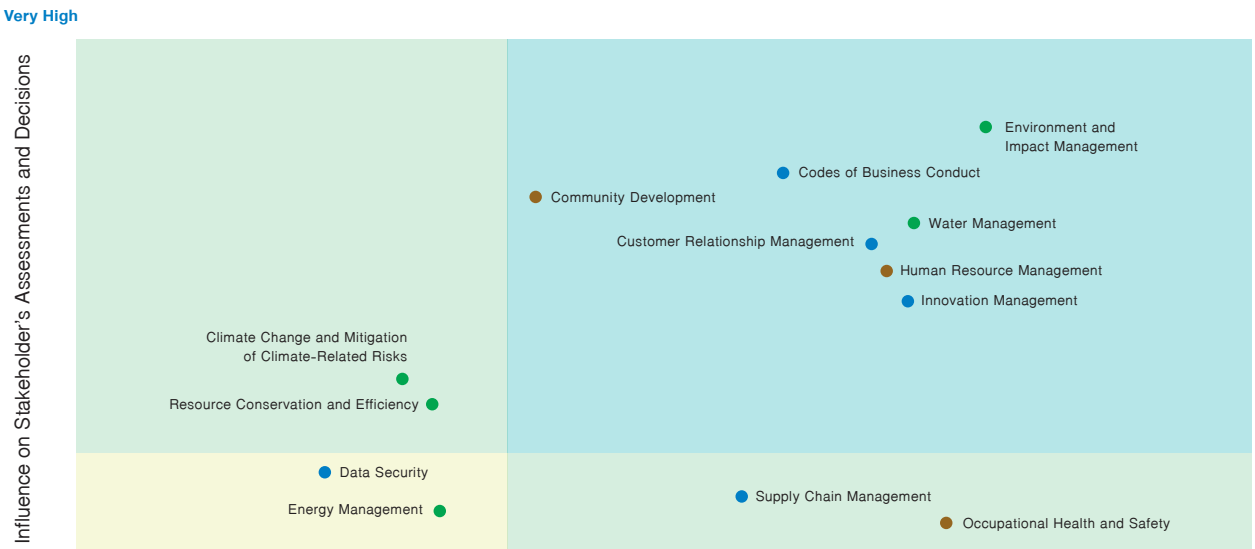
To prioritize the material topics, WHA Group assessed each material topics by considering 1) the significance of the topic to WHA Group's economic, environmental, and social impacts and 2) the topic's influence on stakeholder's assessments and decisions. The assessment was conducted on the scale of 1-4 which prioritized the material topics into four levels of importance; important, medium, high and very high.

3. Validation

WHA Group conducted a materiality endorsement meeting consisting of senior management from all business hubs and chaired by the Group CEO. The proposed materiality assessment results were reviewed and approved by the management for disclosures in WHA Group's sustainability report.

WHA Group Materiality Matrix 2019

WHA Corporation (WHA)



Medium Importance | High Importance | Very High Importance

Governance / Economic

- Code of Business Conduct
- Customer Relationship Management
- Innovation Management
- Supply Chain Management
- Data Security

Social

- Community Development
- Human Resource Management
- Occupational Health and Safety

Environment

- Environment and Impact Management
- Water Management
- Climate Change and Mitigation of Climate-Reflated Risks
- Resource Conservation and Efficiency
- Energy Management

Materiality
Sustainability Issues

Dimension	Material Topic	Chapter	Corresponding GRI Topic	Impact Boundary		SDGs	Page
				Internal	External		
Governance / Economic	Code of Business Conduct	Code of Business Conduct	• Management approach (GRI 103) • Ethics and integrity (GRI 102-16) • Anti-corruption (GRI 205-2, 205-3)	Employee	Shareholder Supplier / Creditor		35-38
	Customer Relationship Management	Customer Relationship Management	• Management approach (GRI 103)		Customer		39-34
	Innovation Management	Innovation Management	• Management approach (GRI 103)	Employee	Shareholder Customer Community		44-52
	Supply Chain Management	Supply Chain Management	• Supply chain (GRI 102-9) • Management approach (GRI 103) • Supplier Environmental Assessment (GRI 308-1) • Supplier Social Assessment (GRI 414-1, GRI414-2)	Employee	Supplier / Creditor		53-56
	Data Security	Data Security	• Management approach (GRI 103) • Customer Privacy (GRI 418-1)		Customer		57-61

Dimension	Material Topic	Chapter	Corresponding GRI Topic	Impact Boundary		SDGs	Page
				Internal	External		
Social	Community Development	Community Development	• Management approach (GRI 103) • Economic Performance (GRI 102-1) • Indirect Economic Impacts (GRI 203-2) • Local Communities (GRI 413-1)	Employee	Community		63-71
	Human Resource Management	Human Resource Management	• Management approach (GRI 103) • Organizational profile (GRI 102-8) • Employment (GRI 401-1, GRI 401-2) • Training and Education (GRI 404-1, GRI 404-2, GRI 404-3) • Diversity and Equal Opportunity (GRI 405-1)	Employee			72-77
	Occupational Health and Safety	Occupational Health and Safety	• Management approach (GRI 103) • Occupational Health and Safety (GRI 403-1, GRI 403-2, GRI 403-4, GRI 403-5, GRI 403-6)	Employee	Supplier Community		78-83
Environment	Environmental and Impact Management	Environment and Impact Management	• Management approach (GRI 103) • Emissions (GRI 305-7) • Effluents and Waste (GRI 306-2) • Biodiversity (GRI 304-1) • Environmental Compliance (GRI 307-1)	Employee	Customer Community		85-93
	Climate Change and Mitigation of Climate-Related Risks	Climate Change and Energy Management	• Management approach (GRI 103) • Energy (GRI 302-1, GRI 302-4) • Emissions (GRI 305-2)	Employee	Customer Community		94-99
	Energy Management						
	Water Management	Water Management	• Management approach (GRI 103) • Water and Effluents (GRI 303-1, GRI303-2) • Effluents and Waste (GRI 306-1)	Employee	Customer Community		100-103
	Resource Conservation and Efficiency						

GOVERNANCE AND ECONOMIC DIMENSION

Code of Business Conduct

Ensuring good performance in regulatory compliance and effective implementation of business code of conduct enhance business competitiveness and increase the investors' confidence while reducing risks and damages on WHA Group's business and reputation. It has been proven that corporate misconduct not only results in damage to reputation but can also lead to financial loss and loss of license to operate. To mitigate potential risk to the business, WHA Group Commits to conducting fair business practice and recognizes the importance of integrity and transparency as the underlying fundamental factors to build trust and maintain good relationship between WHA Group and stakeholders for sustainable growth of its business. WHA Group's employees are committed to delivering products and services in an accountable gestures as well as ascertaining that the parties throughout the group's value chain abide by the same practices. Integrity is one of the five WHA Group's core corporate values (Advance, Champion, Resourceful, Partnership, and Integrity) that underpin the organization in sustaining long-term achievement.

In order to ensure that all management and employees cultivate integrity and act in line with the organization's value, WHA Group's Governance Sub-Committee established Code of Conduct that has been endorsed by the Board to serve as a principal guidance for its directors, management, and employees to perform their roles in an appropriate and transparent manner. WHA Group communicated the Code of Conduct with 100% of its management and employees and have expanded its communication scope to cover business partners, and suppliers while expecting all internal and external stakeholders to comply and follow the Code of Conduct in all activities within the scope of their responsibilities. Besides communication of the Code of Conduct, WHA Group also sends out reminders to all employees and communicates with relevant stakeholders on no gift policy prior and during the festive seasons. To affirm the commitment to anti-corruption and bribery for business interest, WHA Corporation and WHAUP have joined Thailand's Private Sector Collective Action against Corruption (CAC) and have been certified by Thai Institute of directors (IOD) in 2017 and 2019 respectively.

WHA Group's active communication and promotion of integrity and accountability. In 2019, the group of companies received a complaint regarding the fraud to the duties. The Company appointed an investigation committee to investigate the facts and filed a criminal charge against the person who committed such fraud.

To encourage good business code of conduct, WHA Group set up Anti-Corruption Campaign in Dec 2019 for all employees within the Group. The campaign emphasizes on anti-corruption policy and no gift policy prior to New Year festival and evaluates the employees' understanding of the policy through fun quiz.

100%

of employees have been communicated on the Code of Conduct

WHA Code of Conduct

In order to promote good governance with focus on business operation whilst considering social responsibility and expectations of the WHA Group 's stakeholders, the Board of Directors has provided Code of Conduct to serve as a guidance of favorable practices to be observed by management and employees. The Code of Conduct manual is available in both Thai and English language to reach local and foreign stakeholders and can be downloaded from WHA Group's website. The manual comprises of business practices, anti-corruption policy, Company's rules, regulation, announcement and directions related to corporate ethics, and list of undesirable practices that all employees should refrain from. These apply to all directors, management, and employees of all levels and positions regardless of their acknowledgement signing. For new employees, WHA Group ensured their awareness and understanding of the Code of Conduct and Anti-Corruption Policy by including a training session on the topics as part of orientation. In 2019, 100% of WHA Group's management and employees have been communicated on the Code of Conduct and signed confirmation of acknowledgement. The Code of Conduct is subject to review annually.

In case there are any report of breaches against the Code of Conduct, Corporate Secretary will consider the case by assessing the severity and level of employees involved. The case will then be elevated to Corporate Governance Committee to consider the breach and decide whether shall be reported to the Board or managed by CEO.

Corporate Values

WHA Group launched the corporate values since 2016 to unify all employees and utilize it as core and leadership competencies for employees' development in order to drive WHA Group to achieve its vision. Integrity is one of the 5 elements of WHA Group's values (Advance, Champion, Resourceful, Partnership, and Integrity). The Group aims to enhance employees value by encouraging innovative thinking and self-development of the employees.

This will raise service quality and create win-win solution with our customers and suppliers. As well as to develop integrity value in all employees with characteristics to cultivate trust and confidence from clients while adhering to transparent working culture, promise, and sincerity. In addition, the integrity value also develop the employees to be diligent and ethically and socially responsible.

Advanced **Champion** **Resourceful** **Partnership** **Integrity**

Anti-Corruption

WHA Group considers corruption as unacceptable practice. The Group therefore announced Anti-Corruption Policy to prevent misuse of authorities and ensures that its business operates in a lawful manner. The policy applies to all operations and its relevant activities and WHA Group strongly encourages the directors, management, and staffs to take part in anti-corruption activities and report any conflict of interest. All management and employees have been communicated on the policy as part of the Code of Conduct.

In terms of governance, WHA Group established Audit Committee to supervise and ensure that all operations activities are in line with the policy. In addition, WHA Group has Internal Audit Department to assess the risks associated with corruption, set up measures to reduce the risks as well as expanding the scope of practice to customers and business partners such as guidelines on gifting and accepting gift.

Whistle Blowing

WHA Group establishes channels for employees and external stakeholders to report and inform clues or suspicion of corruption and offenses with measurement of protection for the reporting persons. The reporting channels for corruption and misconduct related case are:

Reporting Channels

WHA Group

Channels for Employees

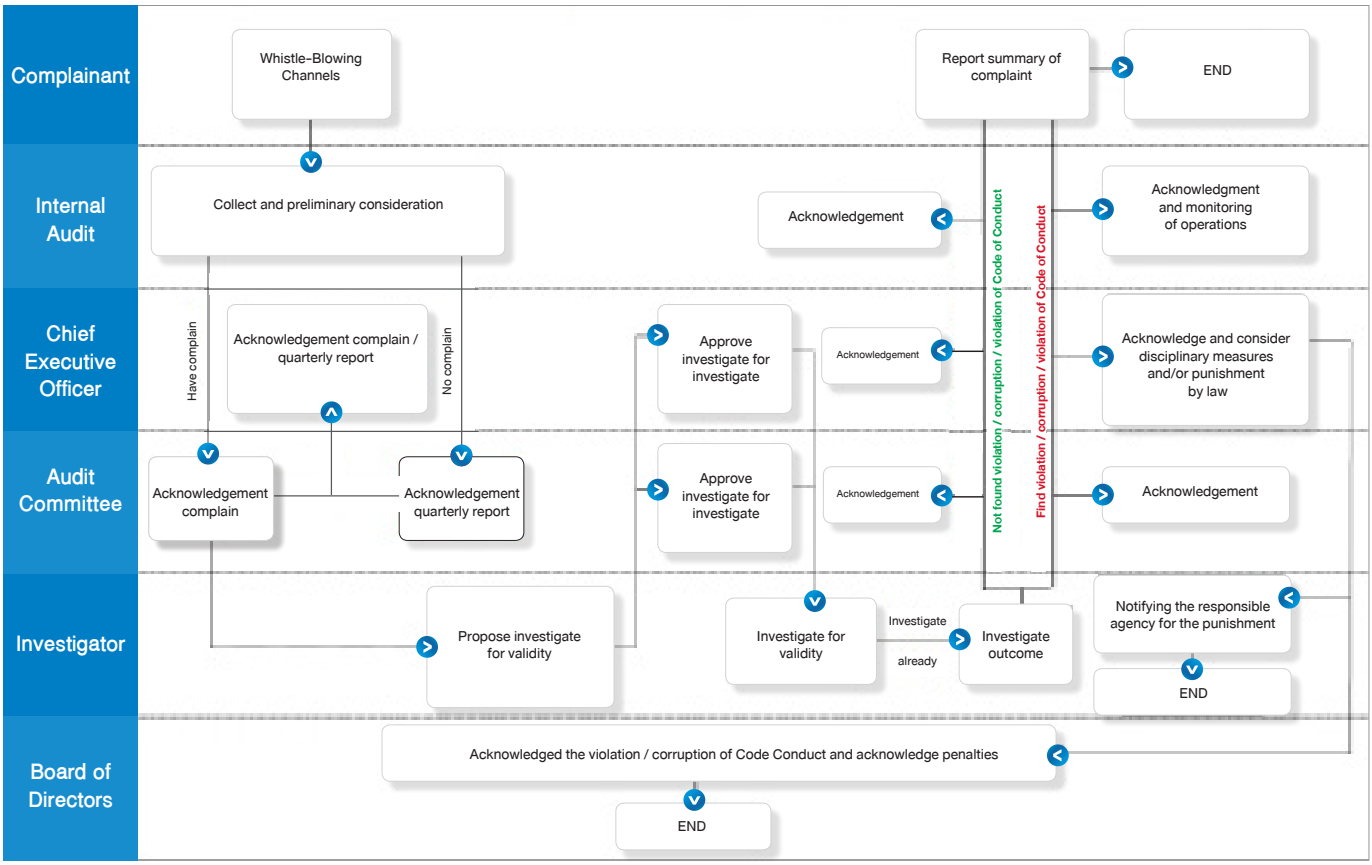
- www.wha-group.com
- Human Resource Department
- Comment Box
- Ceo_office@wha-group.com
- auditcommittee@wha-group.com

Channels for External Stakeholders

- www.wha-group.com
- Ceo_office@wha-group.com
- auditcommittee@wha-group.com

Once the Group receives the report regarding corruption, Audit committee will consider circumstance of the case and investigate the detail.

Whistle-Blowing Process



Customer Relationship Management

WHA Group prides itself as a leading player in logistics properties, industrial estates, utilities and power and digital services in Thailand based on its expertise and experience to offer integrated one stop service solutions to local and international customers from different industries. The Group is knowledgeable in the services, and proactively response to customer's requests to foster good relationship and trust. This is driven by the commitment to be "Your Ultimate Solution Partners", believing that good customer management is a fundamental aspect to building a long-term relationship with the customers that supports the long-term economic growth of the Group. For this reason, WHA Group is committed to good customer relationship management to proactively observe customer's opinions, expectations and suggestions for future improvements through various channels, including internal and external customer events, to establish customers' confidence and secure the Group's leading position as trusted business partners.

This commitment is applied to all of WHA Group's estimated 900 customers from the four main business hubs; all customers are considered as one entity under the Group. A strong relationship with customers is crucial for the business, since the products and services offered requires high involvement and trust from the customers to create a sustainable relationship. In addition, the nature of WHA Group's products and services also requires effective collaboration with the customers from the beginning to sell and after sell services such as consultation and maintenance. Failure to proper customer relationship management may result in loss of customers' trust and discontinued the use of WHA Group's products and service which highly affect the Group's reputation and long-term business growth. To prevent this, WHA Group implements the following initiatives to foster good relationships with customers.

Your Ultimate Solution Partners

Logistics

Offers a "Total Solution Package" that includes customized site selection, world-class design and high quality construction to optimize the long-term logistics cost of local and international customers.

Industrial Development

A leading developer of industrial estates and industrial parks in Thailand, providing developed land for factory, ready build factory and warehouse with toal property solutions.

Utilities and Power

Thailand's largest private provider of industrial water production and distribution, including raw water, process water and clarified water and conventional and solar power.

Digital Platform

Offers a one-stop shop for digital infrastructure, including comprehensive data center services and solutions. Growth and success are based on in-depth knowledge and strong partnership with leading providers of infrastructure, fiber optic and mobile networks.

As an integrated business solution provider, it is WHA Group's responsibility to provide the customers with quality developed land, prompt access to power and utilities, ready to build factories, logistics parks, and infrastructure and support for their seamless operations. Today WHA Group houses over 900 customers and is well aware that each customer has different concerns and expectations. Therefore, WHA Group conducted customer survey to improve the Group's services and ensure customers' satisfaction. To effectively cater to these diverse viewpoints, WHA Group engages with customers through two primary approach; 1) Customer Satisfaction Survey with customers and stakeholders who attend seminar and WHA Group marketing & PR activities, WHA Connect Newsletter , and Customer Relationship Management (CRM) System and 2) Person to person approach which include touch point personnel, customer visit, and customer clubs.

Survey and Marketing & PR Activities

- Customer satisfaction surveys
- WHA Connect Newsletter
- WHA E-Connection
- CRM System

Person to person approach

- Touch Point
- Customer visits
- Customer clubs
- Customer Showcase

Survey and Marketing & PR Activities

To evaluate customer satisfaction, WHA Group sends the customer satisfaction surveys directly to the customers during seminars and customer club activity. The questionnaire assesses customers satisfaction towards WHA Group on all aspects relating to products and services such as; quality of services provided (staffs, resources, and infrastructures), tidiness of industrial estate's common areas, quality of communicated news, or quality of the training provided. The evaluation ratings and comments are then consolidated and analyzed by the Customer Development Department. In 2019, WHA Group achieved an average customer satisfaction score of 8.7 out of 10. The score has increased from the customer satisfaction score of 7.5 in 2018 reflecting the continuous service excellence. The survey also provides WHA Group with information on good practices and areas of improvement to ensure the customer satisfaction.

Year	2016 (score out of 5)	2017 (score out of 5)	2018 (score out of 10)	2019 (score out of 10)	Target 2020
Customer Satisfaction Score	4.0	4.5	7.5	8.7	8.9

From the 2019 customer survey results, WHA Group found 5 key areas that can be improved to enhance customers' experience. There are water quality, road quality & traffic management, quality of electricity and quality of telephone and internet. All matters have been followed up and improved promptly to ensure the best customer experience.

WHA Connect Newsletter

To keep all customers informed of changes, updates and upcoming events in the industrial estates, WHA Group distributes the 'WHA Connect' Newsletter to all customers. The WHA Connect is developed internally and published on a quarterly basis to communicate about WHA Group's products and services, innovations, industrial estate's activities, business collaborations and CSR programs. The WHA Newsletter is available in 2 languages; English and Japanese to ensure that all customers are able to understand the content. This is a channel to keep the customers updated on changes and upcoming events organized by WHA Group. The Newsletter is also presented showcase customers, share customer news and highlights from customer clubs, WHA Investors club and golf events.

Moreover, WHA Group also has another way to connect with customers that is to distribute monthly E-Newsletter called WHA E-Connection to keep customers updated on company news, activities, upcoming events, training programs, and CSR activities. Until now, WHA Group has a mailing list of about 8,700 emails which covers WHA Group customers, prospects, influencers, WHA management and staff as well as related parties.

CRM System

WHA Group has established the Customer Relationship Management system 'CRM system' to provide a consistent services and proper management for customer in all business units. The system is a centralized system to enable authorized person in the related department to fill-in customer database and supply chain, providing all employees with the same knowledge about the customers, their needs, future expansion and expectations and how to properly interact with them. The Group plans to upgrade the system and developed a CRM application in 2020 to effectively manage customers' request and respond promptly. Besides, this will also enhance the coverage as business expands and ensure synergy among business hubs.

In addition, WHA Group has also developed an application as another channel for the customer to contact WHA Group. The application was initially used in the Logistics hub which the customer can request a maintenance job via the application easily. Moreover, the application allows the customer to track the progress to optimize work efficiency for both WHA team and the customer.

Person to Person Approach

Touch Point

Customer Relationship Management is given priority by all management, as it impacts long-term economic growth of WHA Group. The importance of excellent customer relationship management is portrayed into all business hubs mission and vision statements. The Group has a key personnel (touch point) in every business hubs for the customers to raise concerns and requests, and to communicate with the customers about WHA's new business. This allows WHA Group to ensure that all customers are taken care of with the highest quality of service at all interactions, securing trust and good reputation among the customers.

Customer Visit

WHA Group arranges customer visits to maintain good relationship and follow up on the customers' satisfaction. The visit is led by WHA Group's top management also the Customer Development team on festive seasons to deliver WHA Group's greetings. Moreover, WHA Group also celebrated the customers' important business events such as ground breaking, new operation plant opening and merit ceremony.

WHA Customer Clubs

WHA Group strives to create communities through various customer clubs. The clubs are created as a channel for WHA Group and WHAUP to interact with customers and form a channel for customers to form networking and alliances. Customer clubs were originally formed by the investor's country of origins such as Japanese club, and later expanded to formation of new clubs based on interest such as Director Club, Safety Club, HR Club, Labor Club, Investor Club, etc. Beyond networking opportunities, the investor clubs also provide customers with exclusive benefits such as early updates from WHA Group, for instance, timeline of infrastructure project in EEC and opportunity to participate in activities such as WHA Investor Clubs & Charity Golf and training programs.

Training Program for Our Customers

WHA Group organizes training for customers and stakeholders by setting an annual training schedule and invite interested parties to participate the program in order to develop knowledge, skills, and capabilities for stakeholders and the Group. The training also strengthens relationship between WHA Group and all stakeholders.

Customer Complaint Channel

WHA Group values customer's feedbacks and opinions, believing this is a key input for future improvements, for this reason the Group continuously improves the communication channels to receive and monitor customer complaints. This includes e-mail, website, telephone contact, line account, marketing material, club meeting and direct call. Complaints are reviewed by the Business Development Department and also Estate Operation Department who will determine suitable response and coordinate internally for the solutions.

In 2019, WHA Group received a total number of 16 complaints from customers with 90% of the complaint concerning dust, smell, noise, and waste scrap. All complaints have been resolved within the due dates and WHA Group has conducted a number of initiatives in 2019 to ensure that similar issues will not occur again.

Innovation management

Having an effective innovation management in place is vital and considered as the very important step in driving business and operation in a sustainable manner. Accumulation of innovation knowledge and investment in research and development, especially in new disruptive technology, are considered to be new scenario of an organization to stay ahead in the competition. The fourth industrial revolution and impact of robotic development in operation are faced by all around the world as it is embracing itself to utilization these disruptive technologies to cooperate within business processes or, namely, “Digital transformation”. WHA Group is aware that the change might happen to the organization at all its business hubs which are industrial development, logistics, utility and power, and digital platform. Under this circumstance, catching up with digital transformation itself is not merely considered to be challenging for WHA businesses. However, clients expect to see the Group’s capacity in bringing about new innovation and development that meet new business demands. As the world is transforming, the clients’ needs are changing as well. Therefore, WHA Group is committed to rapid adaptation to serve needs of the customers to ensure its competitive advantages and sustainable business growth.

WHA Group is committed to advancing in the business through provisioning of exceptional holistic business solutions to meet increasing and complex customers’ requirements in all business hubs. WHA group sets strategic direction both at the group and business unit level to ascertain customer-centric approach. With our mission, WHA group aims to be leader in its core business by not only serving the best products and services to the clients but also being the innovative solutions partners for the clients. In order to pursue the innovation leadership position in the industry, the Group ensures its smooth digital transformation by building innovative and high performing organization through human capital development, early adoption of innovative solutions, and collaboration with innovation expertise.

Smart Business Solutions

To follow our ambitions, WHA Group cascades its innovation management directions to all business hubs through the 5Y Strategic Directions. To implement the innovation projects, WHA Group sets the target for each business hubs. Moreover, the Group also cascades and motivates the WHA's Innovative DNA of the people by creating the Innovation Leadership Program.

WHA's strategic directions focus on raising the bar for its core business, further embracing innovation and smart technologies, continued development of win-win collaborations with industry leaders, as well as maximizing the Company's unique business synergies. The smart infrastructure and technologies will enhance WHA's capacity to support smart factories and continue to provide promising services and business acceleration for the clients of all business hubs.

Smart Logistics

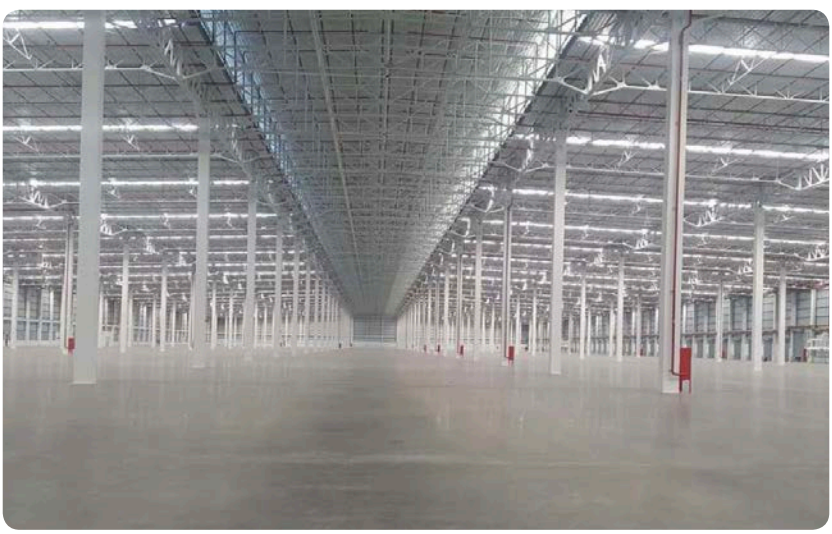
WHA Logistics' infrastructure has been designed to adapt to automate on smart logistics, warehouses and buildings, warehouse management, automation storage, the internet of things (IoT), and big data. The Company has been implementing the smart logistics through embracing new disruptive/enabling technology and innovation to 1) offer new value-added products and services and 2) increase productivity and efficiency of existing operations and services

WHA Built to Suit E-Commerce Warehouse

WHA Group gives high importance to environment conservation during its warehouse construction process by maximizing the use of resources while minimizing waste. The Group incorporates innovation to its complex construction for built to suit warehouse to ensure the delivery of the warehouse that meets the customer's requirement.

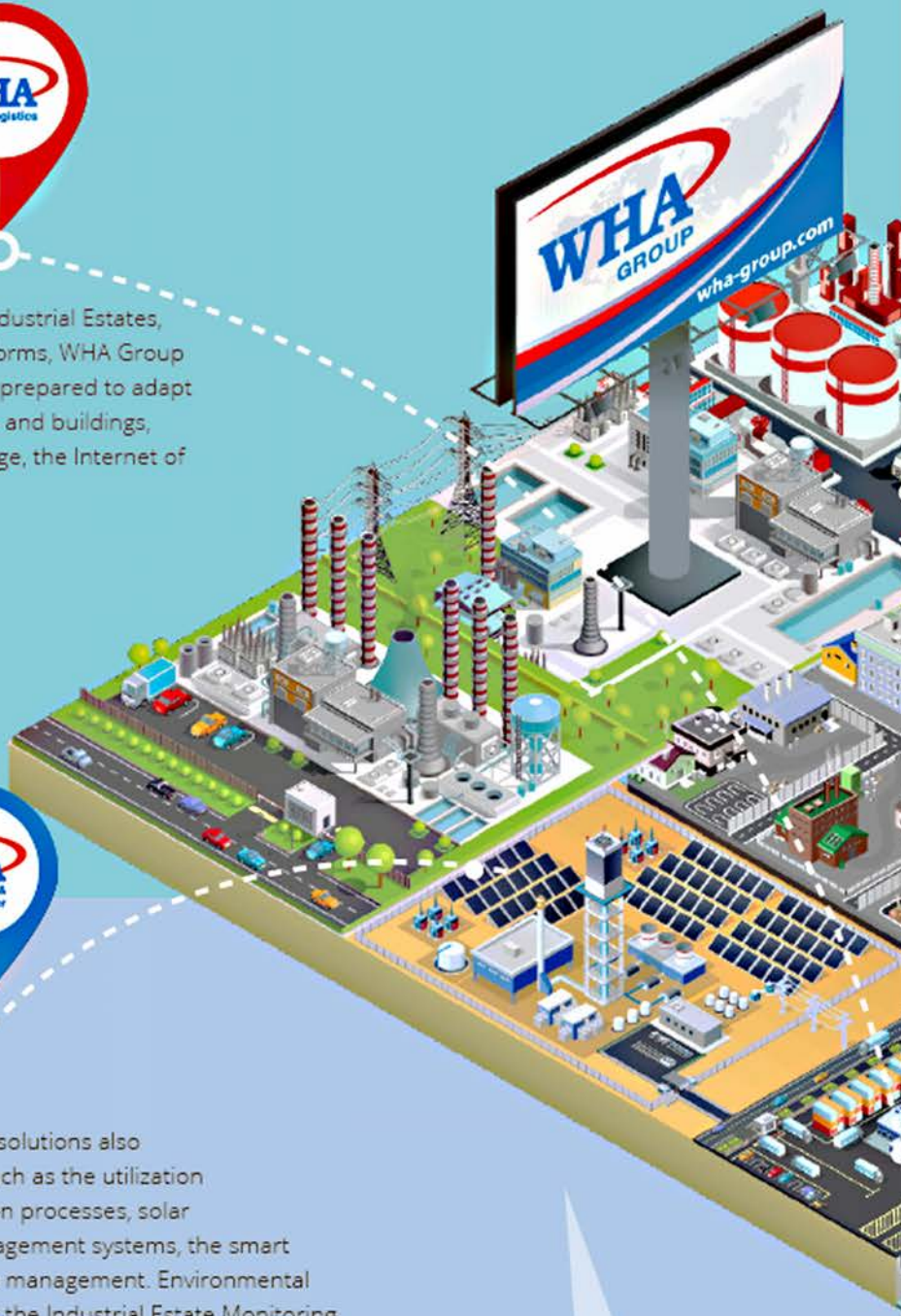
In 2019, WHA Group collaborates with contractors to build warehouses in WHA E-Commerce Park. The project requires high level of floor flatness to handle high stack of racks under the concept of Very Narrow Aisle "VNA" which reduces passage area in the warehouse and increase the storage space up to 30% while supports automated warehouse system. The warehouse also has innovative concrete floor construction called 'Burnish Floor'. The building process includes collaboration between WHA Group and concrete supplier to develop specific concrete formula to create ultra-smooth floor. In addition, the concrete pouring process includes use of construction joints plan, concrete pump, and laser screeder technology to ensure the smooth texture of the floor. The Burnish floor innovation extend the flooring lifetime up to 50% compared to normal concrete floor and is easy to maintain and clean with water which can save the customer's up to 1 million baht of cleaning and maintenance annually. The floor is also environmental friendly as it help reflects light, reducing lighting energy, and does not use any VOCs chemicals that is harmful to workers and environment.

WHA Group commits to develop innovation for quality and environment-friendly products and services. WHA Group uses this innovative process to construct the E-Commerce park project with total area of 200,000 square meters. The quality of the construction warehouse minimizes common construction defects and thus reduce use of construction materials. The achievement of the construction process development has result in customer satisfaction. The Group also received Golden Trowel Award for the ultimate floor smoothness under the Elevate Slab on Pile category in 2019.



SMART LOGISTICS

As Thailand's No 1 developer of Logistics, Industrial Estates, Industrial Utilities & Power, and Digital Platforms, WHA Group of Logistics are already being designed and prepared to adapt to automate on smart logistics, warehouses and buildings, warehouse management, automation storage, the Internet of Things, and Big Data.



SMART UTILITIES

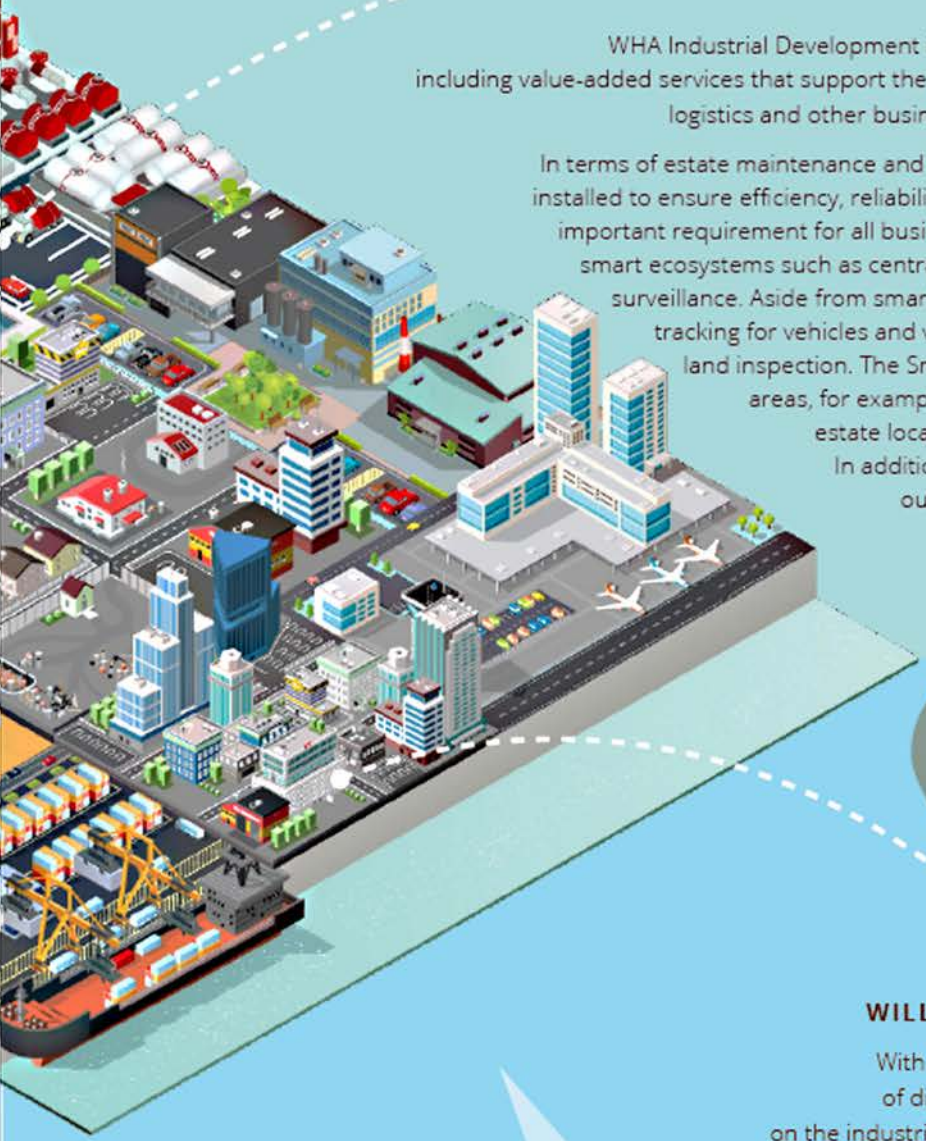
The Internet of Things (IoT) and automated solutions also provide real time information on matters such as the utilization of industrial land, industrial water production processes, solar rooftop panels, online monitoring and management systems, the smart power grid, waste management and utilities management. Environmental protection is enhanced by smart systems at the Industrial Estate Monitoring Center, such as EMC2 for air quality monitoring, online waste water treatment control for recycling and reusing, and online water treatment control systems, among many others.

Digital Infrastructure via FTTx, Data Center and network infrastructure to support all businesses.

For WHA Group, our customers are our top priority. By adopting more digital solutions, WHA is committed to accompanying clients on their journey to growth and success, thus contributing to the economic progress of Thailand and the region.

***Smart Infrastructure** to Support Smooth Manufacturing Operations of Smart Factories*

SMART ECO INDUSTRIAL ESTATES



WHA Industrial Development is currently putting in place smart technologies, including value-added services that support the smooth manufacturing operations of factories, logistics and other businesses within WHA Smart Eco Industrial Estates.

In terms of estate maintenance and management, various smart features are being installed to ensure efficiency, reliability, security and safety at all times. Security is an important requirement for all businesses, which is why WHA is investing heavily in smart ecosystems such as centralized monitoring and control that provide 24/7 surveillance. Aside from smart lighting and smart energy, there is permanent tracking for vehicles and visitors, and drones for traffic management and land inspection. The Smart Eco Industrial Estates also apply to key risk areas, for example, installing a flood monitoring system at some estate locations for monitoring water levels and warnings. In addition, we are studying smart sensors to install into our significant equipment and machines for more connectivity and stability of operations.

SMART TECHNOLOGIES WILL TAKE WHA GROUP TO NEW HEIGHTS

With the coming of smart technologies, the big wave of digital transformation is ready to make an impact on the industrial scene. As industries worldwide are becoming more connected and dependent on automation and information systems, WHA in Thailand has already started digital transformation by adopting these smart technologies, promising better services and business acceleration for our customers in WHA Group's four business hubs.

***Smart Technologies** - Promising Better Services and Business Acceleration for Investors in WHA's Four Business Hubs.*

Next-Gen Logistics Solutions Development

Moreover, WHA Group signed a Memorandum of Understanding (MoU) with GROUND Inc., the leading LogiTech® business in Japan. The signing event was held at Japanese Ambassador's Residence, in the presence of Dr. Somkid Jatusripitak, Thailand's Deputy Prime Minister, Mr. Hideki Makihara, Japan's State Minister of Economy, Trade, and Industry (METI), Mr. Shiro Sadoshima, Ambassador of Japan in Thailand and Dr. Nattapol Rungsitpol, Thailand's Director — General, Department of Industrial Promotion.

This joint effort to develop next-generation logistics solutions aims to enhance the competitiveness of logistics operations in Thailand, in response to the rapid growth of the logistics market and industry. GROUND Inc. will provide warehouse-operation-optimization software and applications, warehouse-operation-automation systems with robots, and knowledge and expertise in logistics operations. WHA Group will make available its logistics facilities in Thailand for testing GROUND Inc.'s logistics solutions to be used as a showcase and developed for WHA Group customers.

Smart Eco – Industrial Estates

WHA Industrial Development is continuing to implement smart technologies to enhance the concept of Smart Eco-Industrial Estates that supports the smooth manufacturing operations of factories, logistics and other businesses. Technologies and innovation have been used in estate maintenance and management by installing smart features to ensure efficiency, reliability, security and safety at all times. To safeguard clients' properties, the Company invested in smart ecosystems security, such as; centralized monitoring and control that provides 24/7 surveillance, permanent tracking for vehicles and visitors, and drones for traffic management and land inspection. The industrial estates' common areas are installed with smart lighting and smart energy system. Moreover, the smart Eco Industrial Estates also apply to key risk areas, such as, installing a flood monitoring system to monitor water levels and give warnings. Last but not least, the adoption or implementation of new technologies have been a case study to address challenges and enhance services such as smart traffic control systems.

Smart Industrial Estate Certificate

WHA Industrial Estate Rayong (WHA IER) received a Smart Industrial Estate certificate in the New City category at the Digital Thailand Big Bang 2019. The industrial estate was recognized by Digital Economy Promotion Agency's Smart City Thailand Office for its commitment to developing a smart industrial estate (Smart IE). The certificate program is aimed at supporting sustainable city management using technology and innovations, in line with the government's Thailand 4.0 initiative.

Smart Utilities

WHA Utilities and Power (WHAUP) aims to introduce new solutions and innovation in order to improve products and serve wider customer base. We apply the advantage of the Internet of Things (IoT) to provide real time information that consists of the utilization of industrial land, industrial water, production processes, solar rooftop panels, online monitoring and management systems, the smart power grid, waste management and utilities management. Environmental protection is enhanced by smart systems at the Industrial Estate Monitoring Center for air quality monitoring and online wastewater treatment control. For electricity service, the Company signed a memorandum of understanding with Provincial Electricity Authority (PEA) for a joint feasibility study on energy innovation projects which will be applied in WHA's industrial estates.

Demineralized Water Production

WHA Group commits to provide fully integrated utility and continuously develop the service to ensure that customers receive the best products and services that meet their requiring quality. In addition, the Group also consider elevating the quality of living of neighboring community while reducing environment impact and resource consumption through the use of innovation.

In 2019, WHAUP developed water treatment innovation by upgrading wastewater reclamation process to produce demineralized water. The demineralized water is considered pure water that does not contain any trace of minerals and is used as industrial water in certain industry such as power plant, petrochemical, electronics, etc. The project was piloted at WHA EIE and added business value to WHA Group up to 55,000,000 Baht per year. The demineralized water production also help reduce freshwater withdrawal up to 1,5000,000 cubic meters per year.

Smart Technologies

With the coming of smart technologies, the revolution of digital technologies is ready to make an impact on the industrial sector. As industries worldwide are becoming more connected and dependent on automation and information systems. WHA invested in digital infrastructure including FTTx, data center, and network infrastructure to support all businesses. Apart from smart communication infrastructures, the Company also offers various managed services and digital solutions such as IT outsourcing, VMS-video management service, IP-PBX telephone technology, call center, email system, website development, firewall, backup system, co-location and access control systems.

WHA Cloud Services

WHA Digital Platform, through WHA Infonite Company Limited — a subsidiary of WHA Group offers Cloud Services to ensure business continuity for the customers. The offered cloud services has a flexible approach that the customers can choose from public and private cloud service, multi-cloud, and hybrid cloud services. The 4 data centers in Thailand enables the company to provide 24/7 network operation support and faster data transfer compared to international service providers. In addition, WHA also provides various managed services and digital solutions to serve its logistics and industrial clients.

Innovation Leadership Program

To raise awareness of WHA Group management and employees, the organization conducts an Innovation Leadership Program in 2019 to ensure understandings of importance of innovation among employees.

Innovation Leadership Program is an intensive talent development program for 45 internal candidates from manager to directors. The program promotes the skills and capabilities necessary to lead the organization through changes and disruptions as well as encouraging sustainable development in the business to support the growth of WHA Group and its people.

WHA Group guided the potential leaders through an enriching designed innovation project experience which promotes the participants to grow startup-minded and customer-oriented mindset while being innovative. The executives also took part in the project as coach, project sponsor, and mentors to encourage innovative working atmosphere and promote innovation as the Group's culture.

Supply Chain Management

The diversity of WHA Group business has led the Company to interact with hundreds of suppliers and contractors throughout the Group's business value chain. WHA Group regards that the suppliers and contractors as important business partners who contribute to the success of WHA's business. At the same time, WHA Group is aware that the activities performed by the business partners could create negative impacts on society and environment and WHA Group can be complicit in such activities if lack appropriate supplier control measures.

In order to foster the business relationships between WHA Group and the suppliers while working together to improve business efficiency and minimizing potential risks on society and environment, WHA Group sets up measures to deal with suppliers and contractors in all its business hubs for both new suppliers and existing suppliers. Procurement is managed at group level and the Group's Procurement Procedure which is based on ISO9001 and 14001 is applied across the 4 business hubs. The procurement procedure covers procurement practices, procurement policy, level of procurement approval authority, procurement process, new supplier selection process, supplier evaluation, contract agreement and cancellation, and payment.

In addition to procurement procedure, WHA Group regularly communicates with the suppliers through supplier meetings, site visits, and supplier evaluation program to improve work efficiency and develop programs that will upgrade the suppliers' knowledge and skills. For construction work, the Group monitors the construction safety standards and ensures construction workers' safety by conducting Job Safety Analysis on the site.

Knowing the Chain

WHA Group conducts business with 521 suppliers of various products and services who contribute important components for the Group's 4 business hubs. Under regulatory setting and more stringent business environment, WHA Group believes that suppliers and contractors seek to ensure that their business offers high standard, competitive price, and timely delivery to guarantee continuous business relationship. WHA Group also puts in place "Supplier Code of Conduct" and communicates the guidelines and expectations to suppliers and contractors, as well as ensures strict compliance to ascertain stakeholders of WHA Group's sustainable supply chain management practices and foster national economic development.

Based on WHA Group's business structure which consists of 4 business hubs, the diverse business activities and suppliers are involved across WHA Group's value chain. The number of suppliers and contractors in each business hub are displayed below:

Logistics

122

Industrial Development

177

Utilities& Power (WHAUP)

207

Digital Platform

15

Supply Chain Risk Management

Apart from procurement procedure, WHA Group conducts supplier risk assessment in areas of business conduct, environmental impact, and social impact to manage the WHA Group's supply chain sustainably and help improve the supply chain impacts in the process of New Suppliers Selection and Supplier Evaluation.

Supply Chain Risk Management

- Identify critical supplier
- Supplier risk assessment (economy, social, and environment)

- Pre-qualification form
- Register qualified suppliers to approved vendor list (AVL)

- Annual assessment
- Capacity building

Supplier Performance Classification and Mitigation process

Performance: Excellent
- Score range 80-100 %
- Action: Supplier to complete self-evaluation every two year

Performance: Good
- Score range 60-79%
- Action: Supplier to complete self-evaluation annually

Performance: Fair
- Score range 25-59%
- Action: Supplier to submit ESG Corrective Action Plan and complete the action within 6 months period with re-audit.

Performance: Poor
- Score below 25%
- Action: Supplier to submit ESG Corrective Action Plan and complete the action within agreed timeline. Business contract shall be terminated if the supplier fails the re-audit.

New Supplier Selection Process

When any of WHA Group's operations requires new goods or services that cannot be provided by the existing approved suppliers, the Procurement Department will screen potential suppliers and select the most qualified suppliers. This will be done through new suppliers' selection process as guided in the Procurement Procedure. All potential suppliers will fill in the pre-qualification form (PQ) which consists of questions to check whether the potential suppliers have policy or management in business integrity, safety management and environmental impact management besides common questions regarding quality, price, and capacity. This is to reduce the supplier-related risks and to ensure that the suppliers will conduct the business responsibly. In 2019, WHA Group had 1 new suppliers from WHAUP business who passed the pre-qualification assessment and become the Group approved supplier.

Supplier Evaluation

For existing suppliers and contractors, WHA Group has separated set of evaluation forms which will be completed by the user and the Procurement Department annually to assess the suppliers and contractors. The supplier's evaluation form mainly assesses quality of products/services, price, delivery, and cooperation while the contractor's evaluation form includes additional criteria regarding compliance with WHA Group's environmental policy, quality, environment, health & safety procedures, etc. as their services have higher risks in those areas. After the evaluation, the Group will inform the suppliers and contractors about the result and agree on corrective action plan if the supplier/ contractor's evaluation result does not meet the Group's standard. If the suppliers or contractors receive poor evaluation result for two years consecutively, they will be removed from the approved vendor list (AVL) and the Procurement Department will issue a written notice.

In 2019, 90% of WHA Group's suppliers and contractors have been evaluated and all of them passed the evaluation.

Critical Supplier

WHA Group realizes that business disruptions and discontinuity of supplied products and services can cause irreparable damage to the business. To ensure the efficiency of supply chain management, WHA Group has identified critical suppliers of which the Company set up additional management measures to reduce supplier impacts and support the suppliers for business continuity and long-term business growth. Critical suppliers are identified through ABC Analysis (spending analysis) along with additional criteria such as provision of essential or difficult to replace components. In 2019, critical suppliers represented 2% of WHA Group's total active supplier base, and covered up to 89% of the WHA Group's total purchases.

WHA Group

Number of Total Suppliers	Number of Critical Suppliers
521	12

Business Unit	% of spending
Logistics Properties	62%
Utilities and Power	16%
Industrial Development	11%

Supplier Training and Knowledge sharing

WHA Group set up a training to improve construction contractor's skills in repairing floor and roof. The training was held at Eastern Seaboard Industrial Estate Training Center in April, 2019 with 8 contractors attended the training. The training includes classroom training about identifying onsite problems and how to resolve the problems with suitable products and on-site training workshop.

Promoting Local Suppliers

In 2019, WHA Group included WHAUP in collaboration with Thailand Board of Investment and Thai Subcontractors Promotion Association organized "Vendors Meet WHA's Customers" event at Pattana Golf Club & Resort, Chonburi with 13 buyers and 139 suppliers participated. The event was the perfect occasion for manufacturers from different industries to meet local suppliers and build new business relationships, enabling target buyers to business solutions while creating new opportunities for the local suppliers.

Data Security

In the present days, advancement in technology has led the world towards ubiquitous connectivity and digitization, enabling globalization of the world economy through development of the artificial intelligence, emergence of smart technology to facilitate working and production process such as hyper-automation. The proliferation of connections and technologies helps promote socio-economic progress and increasing usage of data and information that has been created and stored in digital format than ever before. With digital omnipresence, cyberattacks and risks concerning data and information have become more vulnerable and substantial in terms of frequency and severity. Given an estimation that 60% of enterprises will become victims of major security breaches in 2020, WHA Group is aware that data security risks could lead to business disruption that could affect business partners and customers. WHA Group, therefore, strives to create a rigorous security culture and review the Group's strategic approach to underpin business continuity and sustainable growth of its digital service platform. WHA Group's exceptional provisioning of service responds to its commitment to be the clients' ultimate solution partners to optimize their manufacturing and logistics requirements and to capture opportunities throughout the value chain in Asia.

To ensure an effective protection of the clients' and WHA Group's data, the Group is committed to complying with Thailand's Ministry of Digital Economy and Society recently announced Personal Data Protection Act (PDPA), B.E. 2019 through its information security system for both internal and stakeholders' data. WHA Group manages its digital data and all information technology devices at group level and announced the Information Security Policy which is based on ISO27000 as a guideline for all business hubs to follow in order to secure important and confidential data. As part

of the policy, WHA conducted group level information security risk assessment to identify information security risks and apply suitable information security controls. Considering the dynamic nature of information risk and security, WHA Group reviews the information security risk assessment quarterly and information inventory on a yearly basis to ensure risk mitigation and control are in place and up to date.

In order to support the organization vision in digital transformation, WHA Group has projected to reform its Information Technology department and revise the Information Security Policy in 2020. The reformation plan includes but not limited to transformation of all business hubs' information security system, raising awareness of data security risks among employees and preparing the employees for the digital transformation and superior data security system.

Customers' Data Security

World Class Standard Data Centers

WHA Infonite Company Limited is one of WHA Group's subsidiary in Digital Platform hubs that offers comprehensive IT solutions to the customers. One of the digital services that deals with customers' data is Data Center that the Group offers digital service under the co-location service concept. Currently, WHA Group has 4 operating data centers dedicated for customers to rent the space and house their computer systems and associated components. To guarantee the security of all WHA's data center facilities, three data centers were constructed and operated according to "best practices" equivalent to Tier III data center standard and one of the data centers received the highest standard of Tier IV Gold Certified which is the only data center facility in Asia to receive the certification.

Apart from the world-class standard infrastructure, all data centers have electricity backup system installed in order to prevent downtime and are equipped with 24 hours ambience monitoring to ensure the servers function efficiently and the devices have longer life expectancy. WHA Group's data center facilities also provides 24 hours on-site staffs and security guards together with security cameras and fire alarm to protect the data centers. The data centers are commonly used by the customers as their main database site and sometimes as back up site to prevent database from any unexpected situation or natural disaster. To serve the purpose and safeguard customers' data, all WHA Group data centers are designed to support as a disaster recovery site and looked after by the expertise who is certified with Certified Accredited Tier Design from Uptime Institute. Finally, the Group provides on-site Business Continuity Plan (BCP) to assist the customers to easily manage their IT system. Moreover, in 2020, WHA Group will apply for PCIDSS certificate in order to secure credit and debit card transaction service as part of its progress to higher professional solution level.

With all above strict security controls of data centers, there was zero case concerning breaches of customers' data privacy and losses of customers' data in 2019.

0 **Number of complaints concerning breaches of customer privacy**

3 **Tier III Compliances data centers**

1 **Tier IV Gold Certified data center**

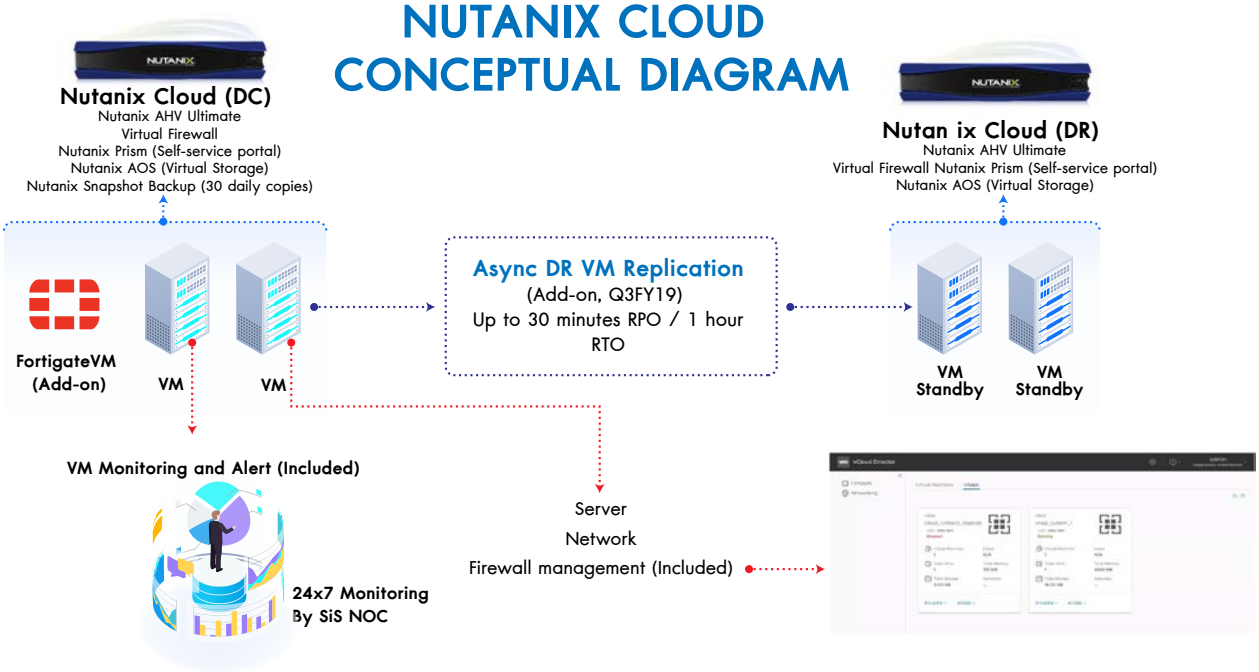
Cloud Services Security

WHA Group offers cloud services as innovative services on top of the data center infrastructure service and co-location service. WHA Cloud Services has flexible options enabling the customers to choose between public and private, multi-cloud and hybrid cloud services. The Group provides computer resources, both hardware and software, and computer network preparation supported WHA Group's FTTx infrastructure which allows customers to access fast speed, high security, and low latency connections. The cloud services are supported by experienced professionals with certification from world class agencies such Dell Certification, Hitachi Data System Certification, VM Ware Certification, and OpenStack Certification to provide advice and control the computer network system.

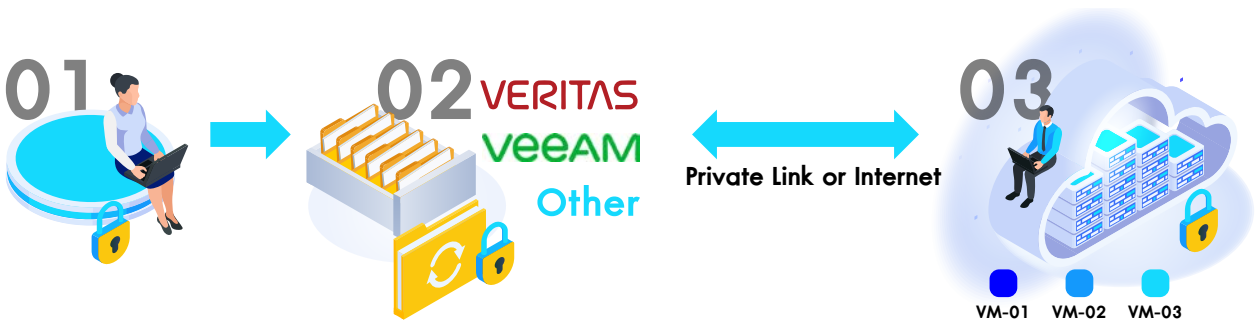
The Software as a Service (SaaS) is part of the Group's cloud services that allows customers to access software or applications from anywhere via web browser or internet connection. To ensure the ability to deal with any data security related risks, the Group offers a range of pro-active approach that customers can choose to secure their data such as firewall, Anti-Virus, information back-up system, security system, access control systems, etc. With these data security approach, the customers can ensure their business continuity as data security risks have been minimized and this results in zero complaints in 2019 from all customers regarding losses or leaks of customers' data.

0 **Number of identified leaks, thefts, or losses of customer data**

NUTANIX CLOUD CONCEPTUAL DIAGRAM



OBJECT STORAGE TECHNOLOGY



ขั้นตอนการเข้ารหัสข้อมูล

01) ผู้ใช้งานกำหนด key ในการเข้ารหัสข้อมูลผ่าน backup software (AES 128-bit encryption หรือ AES 256-bit encryption)

02) Backup Software เข้ารหัสข้อมูลที่สำรองด้วย key ผู้ใช้งานกำหนด

03) Backup Software ส่งข้อมูลที่ถูกเข้ารหัสแล้วไปเก็บบน Cloud Storage

Data Security knowledge sharing

WHA Group held an interactive seminar entitled “On Cloud Warehouse Management and ERP” at WHA Saraburi Industrial Land (WHA SIL). With the aim to inform WHA SIL customers on the importance of the enterprise cloud platform, the seminar covered current topics including WHA Cloud Service, SAP on Cloud, and Warehouse Management System. The guest speakers from WMS System Consultant and SiS Distribution, shared their insights and knowledge of data securities with participants.

SOCIAL DIMENSION

Community Development

Establishing and expanding our business that consists of industrial estates and logistics parks has not been a difficult issue for WHA Group. However, harmonizing with and gaining the acceptance of the surrounding communities are among the biggest challenges that businesses are confronted with these days. The trust that WHA Group has gained from its communities over the past 30 years can reassure stakeholders that operations can continue smoothly.

In addition, since WHA Group's vision is to become Thailand's most admired industrial development partner for businesses in all segments, the Group is aware of its responsibilities as a major player, as well as its duty, to give back to society.

Maintaining the organization's reputation and gaining the trust of the surrounding communities have always been WHA's priorities. Over the years, WHA Group has initiated various corporate social responsibility (CSR) activities that represent the Group's commitment to sustainability.

WHA Group conducts development programs to respond to communities' needs and help them grow in a sustainable manner. To identify the different needs, WHA Group has conducted Environmental Impact Assessment (EIA) and regular social engagements, such as community visits, and uses the feedback to establish suitable environmental and social programs.

WHA Group expects to allot an annual budget to ensure that the social activities it has committed to will be realized in line with the UN Sustainable Development Goals. In 2019, WHA Group allocated a total CSR budget of 48,030,000 Baht or 0.46% of its revenue; and 3,300 WHA staff working hours to conduct all CSR activities. Apart from monetary contributions, WHA has appointed CSR committees in each business hub to engage proactively with the local communities around its industrial estates. WHA Group has set its Community Engagement Level goal to reach out to more than 97% of communities in the vicinity. The company achieved this goal in 2019 by engaging with a total of 131 out of 133 villages in Rayong, Chonburi and Saraburi. The 3 pillars of sustainable community development programs are Educational Development, Environmental Conversation & Sharing, and Social and Healthcare. Its community engagement goal for 2020 remains unchanged at 97%.

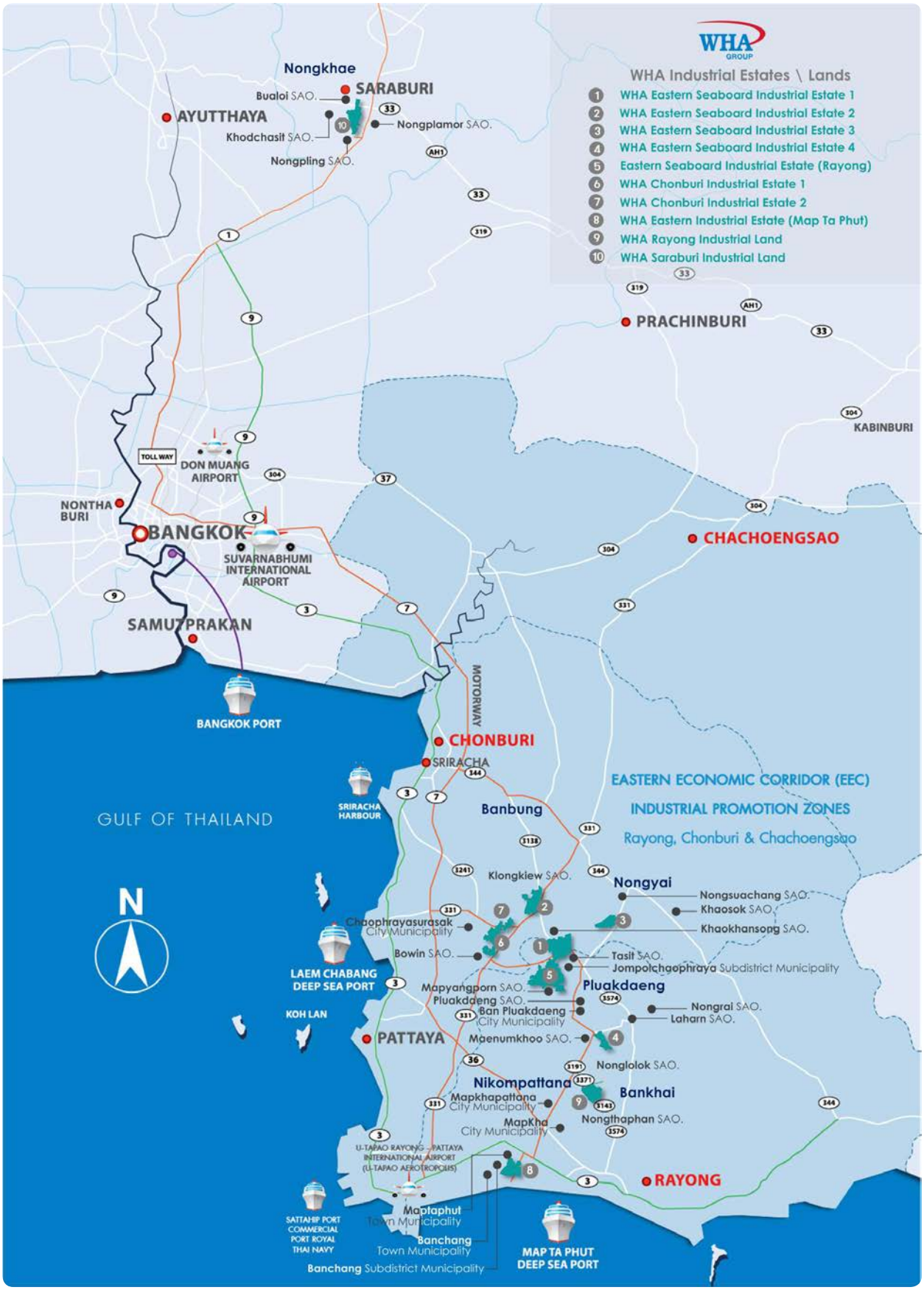
WHA Group CSR programs have evolved and today form the WHA Corporate CSR theme which focuses on three pillars: Environment, Education, and Community. The Corporate CSR theme is used to guide the CSR Committee and WHA Group's operations to establish various environmental and social programs such as "Clean Water for Planet" and "WHA Art Camps" for both students and school teachers. These two annual programs have become the Group's most distinguished CSR programs. In addition, WHA Group also conducts programs to promote education and community health through school donations, student scholarships under the Dual Vocational Education (DVE), health check-ups and sports sponsorships in collaboration with local entities. The 2019 CSR programs and activities have been implemented to cover 100% of WHA's industrial estates and benefit up to 182,054 people from the neighboring communities.

A total of 133 villages in 23 tambons are located close to the different industrial estates and logistics parks under the WHA Group, situated in the strategic provinces of Rayong, Chonburi and Saraburi. The needs of these communities, under 25 local administrative organizations, are identified and assessed so that WHA can plan and develop an appropriate action plan to help children, youth, families and the elderly.

23
Tambon

133
Villages

25
Local Administrative Organization



3 Provinces

25 Sub Districts

133 Villages

Caring for the Environment

Clean Water for Planet

Since industrial estate development is one of WHA Group's main businesses, it strictly follows EIA guidelines and other relevant regulations on water management. Most WHA Industrial Estates are located in the water catchment area of the two main reservoirs, Nong Pla Lai and Dokkrai reservoir, which are the main water sources for communities and business operations in the provinces of Rayong and Chonburi.

Apart from having a robust and effective water management system in its industrial estates to ensure its license to operate, WHA Group engages with local communities around the industrial estates to identify local issues that the Group can help resolve. Water quality has been one of the community's main concerns.

In line with this, WHA Group initiated its "Clean Water for Planet" program in late 2016 to improve water quality around its industrial estates and to raise awareness on water resource conservation. The program also improves local people's quality of living by promoting access to clean water, educating students and community members on water conservation and wastewater management, and collaborating with Chulalongkorn University to become a "learning center" for environmental engineering students.

This began with WHA Group's investment in R&D programs, the creation of WHA management and expertise teams and increased collaboration with Chulalongkorn University and Laem Chabang Municipality for technical knowledge sharing.

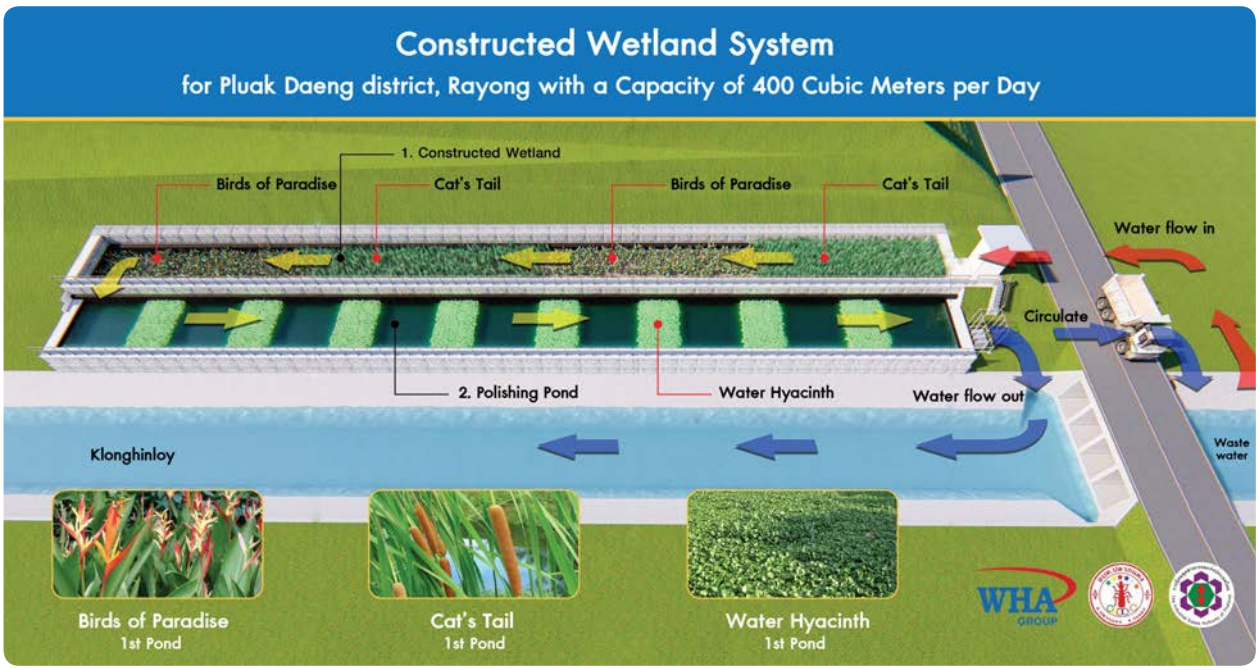
Today, WHA Utilities and Power (WHAUP) and WHA Industrial Development (WHA ID) are implementing the highly successful Clean Water for Planet initiative for safer and greener business operations. WHAUP uses its experience and knowhow to provide wastewater services to manufacturers located within WHA industrial estates and local communities, so that their treated wastewater can be safely recycled.

Constructed Wetland Water Treatment Facility (highlight)
One of the most significant achievements in 2019 was the completion of a wastewater management and treatment facility which was delivered to Pluak Daeng Sub-District Office in Rayong Province.

The Clean Water for Planet project was initiated by WHA Group following an investigation of the water available to the public around its industrial estates. As a result, it cooperated with the Pluak Deang Sub District Organization to improve the quality of water in other areas.

This was followed by another joint effort to build a constructed wetland system, inspired by and adapted from HM King Bhumibol's experiments in biological wastewater treatment method. The project aimed to demonstrate the application of simple wastewater treatment method and to raise awareness and develop better understanding of water quality restoration among communities in a sustainable method.

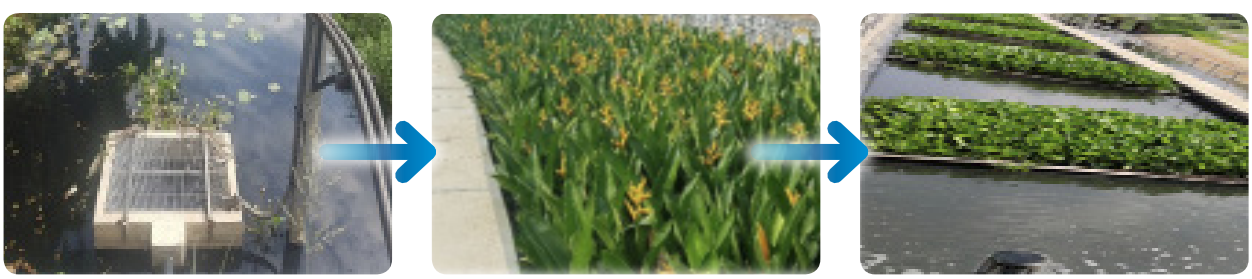
The facility consists of two constructed wetland systems, considered a natural technology that is eco-friendly, cost effective and easy to maintain. In the first system, ¾ inch-crushed gravel is laid on the ground to form a 50-cm thick layer that collects wastewater from Pluak Daeng communities. Aside from filtering sediment, it also serves as a protection for bacteria that consumes organic elements in the wastewater. The facility is surrounded by well-selected plants including cat's tail and birds of paradise that help absorb nitrogen and phosphorus in the wastewater. The second system uses water hyacinths that oxygenate the wastewater, while reducing nitrogen and phosphorus.



The constructed wetland has a capacity of 146,000 cubic meters per year, allowing a reduction of organic compound by 80%. WHA Group follows up on the project's results by constantly testing the water quality and by conducting a community satisfaction survey. This resulted in improved water quality in the Hinloy canal which runs through the Pluak Daeng community. This project has taught the local community about simple wastewater treatment methods that other local authorities can apply to other water sources, which contributed to the SDG no.6 Clean Water and Sanitation and no.9 Industries, Innovation and Infrastructure. The project also reduces complaints related to water pollution, even though the problems do not stem from the company's operations.

For this project, WHA Group contributed technical and engineering knowhow, along with over 4.49 million Baht in financial support and 970 staff working hours. The project benefits approximately 4,000 individuals, 220 apartments, 125 houses, and 30 local markets in the Pluak Daeng community. The constructed wetland system allows a reduction of organic compound by 80%, plus cost and energy savings. It is an environment-friendly solution that provides natural green surroundings for the community.

Performance monitoring of constructed wetland



Influent (Water before wetland) Effluent of CW-1 Effluent of CW-2

Influent Effluent of CW-1 Effluent of CW-2

Environmental Awareness Program

For WHA Group, taking care of the environment is the way forward. The Group believes that giving community members the opportunity to join activities is an excellent way to raise their awareness on environmental concerns and teach them to respect nature.

Every year, leaders, representatives and villagers from 15 communities around WHA Industrial Estates in Rayong and Choburi are invited for educational visits to different ecological projects. The fun-filled outings aim to foster the local communities' appreciation for nature and provide them a better understanding of the environment. WHA Group's annual programs also promote collaboration of local governments, public and private organizations and individuals in protecting the environment and promoting biodiversity in local areas. Participants are given hands-on experience through ecological restoration activities such as coral planting with the use of artificial coral plant beds, releasing baby nurse sharks into the sea, tree planting, rehabilitating mangrove forests, etc.

In 2019, WHA Group conducted 5 tree planting projects with 5 communities.

Promoting Education

WHA Art Camps

WHA Group has been hosting art camp activities for 11 years. The objective is to raise awareness among schoolchildren about their role in protecting local culture and environment whilst developing the children's creativity, freedom of expression and communication skills. In 2019, WHA Group held 3 art camps in Chonburi and Rayong to instill art appreciation and teach different basic art techniques, for example, watercolor, colored pencils and pastels, with "Clean Water for Planet" as its theme. In 2019, a total number of 635 students and 38 teachers from 35 schools around the WHA Industrial estates participated to express their feelings and creativity through art. The art camps include:

Art Camp for Teachers

Art Camp for Teachers is a program to train educators to impart a love for art to their young students. Using watercolor, crayons, pastels and colored pencils for paintings, sketches and drawings, the teachers learn basic art techniques. WHA Group firmly believes that by developing art appreciation for schoolteachers, art awareness and skills can be passed on to the children to help boost confidence and increase the chances of success in the future. The participant satisfaction survey, taken among 38 teachers from 16 schools during the 2019 Art Camp, showed that 92% of them were satisfied with the program.

Art Camp at Hometown

Art Camp at Hometown focuses on developing students' interest in the arts to use their creativity in a productive manner. Moderated by the team from InspireSight, an organization dedicated to bringing art, culture and history to different communities, the all-day event includes character-building games designed to boost self-esteem and teach the youth to live in harmony within the community. With a special theme revolving around the community and nature, students from Prathom 4-6 unleash their inner artistry through brushes and paints while reflecting on their role in protecting the environment.

According to the 2019 survey taken by 617 students from 20 schools, 90% were happy to join the program. The majority felt that the project enhanced their basic art skills, and that the knowledge gained can be useful for their everyday life.

One of the participants in the 2017 Art Camp at Hometown program, Ms Chanida Poochurtsai, showed off her artistic talent in the 69th National Students' Arts and Crafts Competition 2019 organized by the Ministry of Education. "Nong Cake" proudly went home with the grand prize in the Prathom 1-6 level of Physically Challenged Student Category.

Art Camp Trip

The annual Art Camp Trip is organized to give Matthayom 1-3 students the opportunity to explore nearby historical and cultural sites, and to integrate this with art concepts. Children from schools in Rayong and Chonburi are given introductory lessons on art composition, watercolor and still life painting. To combine theory and practice, they visit places such as the wastewater treatment lagoon in WHA Chonburi Industrial Estate or the Nong Kho reservoir, and discuss the concept of protecting natural resources to promote sustainability in their community. They also visit a cultural or religious site where they can express themselves through visual art, while connecting and identifying with their cultural identities.

The satisfaction survey of the 2019 Art Camp Trip reported that 88% of 35 participating students from 9 schools were satisfied with the program.

The Art Camp trip has always been well-received by local schools in Rayong and Chonburi. The program has achieved its goal of supporting education among Thai youth through art. The graph below shows the satisfaction metrics for all Art Camp activities in 2017-2019.

WHA Supports Local Schools

WHA Group sees the importance of education as one of the key factors to improve socio-economic development and uplift people from poverty. To lend its support to local schools in neighboring communities, an annual school contribution program was established. Now on its 23rd year, WHA Group management and staff participate in this program to enhance education for the youth in 67 educational institutions, and to support a wide range of learning activities including academics, sports, art, music and social development.

In 2019, WHA contributed a total value of 3,307,700 Baht for this initiative, benefitting over 20,000 young students, in collaboration with over 50 companies located in the WHA industrial estates.

For vocational college and university students, WHA supports the Dual Vocational Education (DVE) initiative, created by the Office of Vocational Education, allowing students to get on-the-job training along with theoretical education. For the last 9 years, in cooperation with Ban Khai Technical College in Rayong, WHA gives full scholarships plus allowances to smart, disadvantaged undergraduates, and helps them find on-the-job training opportunities among customers in its industrial estates.

WHA is extremely proud of the 65 students who have won scholarship grants, and the 1,850 who have participated in the DVE program since it started almost 25 years ago. The WHA Human Resource Development Plan continues to help the youth acquire in-demand technical skills and core competencies to secure jobs of the future.

Supporting Our Community

Jobs for the Community

WHA Group realizes the importance of providing jobs to the youth, especially qualified, skilled workers who would like to join international companies.By helping them, WHA is also able to improve their families' lives and strengthen communities.

WHA has created a job pool to help its customers attract applicants and recruit workers from neighboring communities. In 2018, for example, 607 jobs in 139 companies were filled, thanks to the company's employment matchmaking initiatives. Last year, 569 vacancies were filled in 134 companies. Most of these jobs were in Eastern Seaboard Industrial Estate (ESIE) and WHA Eastern Seaboard Industrial Estate 1 (WHA ESIE 1) where Thailand's automotive cluster is located

Community Healthcare

Thailand is facing the aging population issue, similar to the global population trend. As part of WHA Group's commitment to promote community health and wellbeing, the Group set up a preventative healthcare program providing 800 complimentary flu shots to senior citizens in Chonburi and Rayong provinces. Visits are held in February and June, prior to the rainy season, to boost the immune system of the elderly. Apart from providing influenza vaccinations, the company also collaborates with the Rayong Provincial Red Cross Chapter for quarterly blood donation activities at the WHA Eastern Industrial Estate (WHA EIE) and Eastern Seaboard Industrial Estate (Rayong). This activity consistently attracts numerous donors from WHA's stakeholders such as WHA employees, customers, local government officers and local residents. A significant amount of blood is collected each time to help protect blood supply and save precious lives.

Community Visits

In 2019, WHA Group arranged a 2-day community visit for 25 WHA Group management and staff members, representatives of Rayong and Chonburi authorities from 17 communities, and 81 members of neighboring communities, as part of WHA Group's stakeholder engagement program. The study was at E:mc^2, the first real-time environmental monitoring unit at Eastern Seaboard Industrial Estate (Rayong) the center offers real-time processing of environmental reports, with highly reliable and accountable methodology and transparency policy. E:mc^2 also provides multiple electronic channels for environmental complaints and feedback. During the visit to Toei Ngam Beach, Sattahip Naval Base in Chonburi province, participants joined eye-opening environmental activities such as releasing baby nurse sharks back into sea and planting coral using artificial plant beds. These actions aim to help restore the biodiversity of the ocean and strengthen the bonds between WHA Group, local governments and community members. The satisfaction survey reported that 85% of the participants were satisfied with the trip.

The annual activity helps explain to the community members the way WHA Group operates its businesses. The hands-on knowledge and experience gained throughout the program enable the local leaders to find the appropriate approach for a more sustainable community. The satisfaction survey for the trips in 2017-2019 scored the following:

The satisfaction survey reported that 85% of the participants were satisfied with the trip.

2017 → **83%**
2018 → **85%**
2019 → **85%**

The annual activity helps explain to the community members the way WHA Group operates its businesses. The hands-on knowledge and experience gained throughout the program enable the local leaders to find the appropriate approach for a more sustainable community. The satisfaction survey for the trips in 2017-2019 scored the following:

Sports Sponsorships

Chonburi, one of WHA Group's key operation areas, is proud of its local football team, Chonburi Football Club (Chonburi FC). WHA Group has been supporting this popular Club for 12 consecutive years as part of its community engagement program and to promote youth advancement through sports. Furthermore, WHA Group also encourages sportsmanship among employees by sponsoring the 21/9th WHA-Pattana Industrial Football Cup for employees in the Eastern Economic Corridor industrial estates. The objective of the activity is to encourage solidarity and camaraderie among sports enthusiasts.

Other sports teams that benefit from WHA Group's staunch support are the Pluak Daeng Rayong United Football Club and, the Rayong Football Club. and Bankhai United Football Club.

Human Resource Management

WHA Group recognizes the importance of human resources as a key driver to success of the 4 business hubs ; Logistics Properties, Industrial Estates Development, Utilities and Power (listed company called WHAUP) and Digital Platform, as the nature of WHA Group's business is integrated service base that requires competent workforce.

As global population continues to grow to meet the expected 9 billion people by 2050 as projected by the United Nations, societies demographic are notably shifting towards an ageing society. This change affects workforce demographics in the market and leads to shortage of workforce in some areas. WHA Group recognizes this shift in the market and its workplace, observing a growing number of younger generations such as Gen Z in the workplace, compared to the dominance of Generation Y and Z in the past. This signals a clear change in the labour market, evidencing the intensified competition for competent human resources in the labour market. For this reason, WHA Group adjusted its human resource management approach to reflect the change and cater to the new workforce generation who seek a different benefit package.

Human resource related matters are managed at group level; standard employee engagement, recruitment process, benefit packages, and employee development programs are applied to all business hubs. In 2019, WHA Group implemented various initiatives to satisfy its workforce to ensure the ability to attract and retain capable employees to continue the operations in the future.

WHA Corporate Values

WHA Group considers corporate values as a foundation to instill and hold all employees from 4 business hubs to act and perform their roles in harmonious and effective ways. WHA Group believes the 5 elements of the corporate values; Advanced, Champion, Resourceful, Partnership, and Integrity will enhance employees' leadership and competencies to drive WHA Group through its digital transformation and achieve the business outlook.

Boost Up Your Inspiration for Success

In order to enhance good relationship among WHA Group employees and ensure that they understand and embrace the corporate values which will lead to the Group's success, WHA Group set up a corporate culture activities under the theme "Boost Up Your Inspiration for Success" in May 2019 at a resort in Samutsongkhram province which involves department head to staff level employees from all business hubs. The activities encouraged staffs to build growth mindset and boost up team performance through team building activities and workshop. From this workshop, the employees learned to adapt to challenges through learning. The employees also learned to set mutual goals for their team to improve team success and strengthen their relationship with the colleagues.

Advanced

Champion

Resourceful

Partnership

Integrity

Employee Engagement

One of the key human resource management that WHA Group gives high priority is employee engagement which is a process that promotes employees' satisfaction, maintain efficiency, and ensures all employees understand the corporate's values and business direction.

In 2019, WHA Group conducted a Town Hall Meeting to inform the employees of the business transformation and employee engagement survey to improve employees' satisfaction. The Town Hall Meeting involved up to 428 employees from all business hubs.

Town Hall Meeting

On 8th March 2019, WHA Group arranged a town hall meeting which involved management and employees from all business hubs at Mega Cineplex, Bangkok. During the meeting, WHA Group CEO, Ms. Jareeporn Jarukornsakul, and the CEOs of all business hubs communicated with the employees on WHA Group's strategy, business plan, and the 5 years business direction. The management delivered the content in an easy to understand message and the meeting was set up with informal atmosphere to encourage two way dialogue between the management and staffs. As a complement of Human Resource Department's communication, the town hall meeting allows the staffs to get good understanding of WHA Group's direction and their roles to drive WHA Group to align with the business outlook.

Employee Engagement Survey

WHA Group conducted a group level employee survey in September 2019 to reflect overall employee satisfaction and address areas where WHA Group can improve to support the staffs. The survey assessed employee satisfaction on 8 categories; communication, leadership, core value, career, teamwork, work support, work life balance, and employee engagement. The initiative were conducted to cover 67% of total number of employees from all business hubs and was well received by the employees, as reflected by the favorable score rating in most categories from the participants. The overall employee satisfaction of 2019 was 82.8%. The Group sets the target to raise the employee satisfaction score by 3% in 2020. The engagement survey result had been communicated to management including Executives and Business Hub Management via management meeting. The result was also shared to all staffs through internal share point.

The survey results were used to improve and enhance human resource management for improvements. The Group analyzed the survey result and set up 1-3 year plan of improvement programs and communicated the progress of the programs with the employees during staff quarter meeting and management meeting.

To get a more accurate engagement result, WHA Group aims to survey 100% of full time employees by Year 2022 and plans to utilize external third party to conduct the survey in 2020 to ensure that collected data are truthful and unbiased.

WHA Group Response Rate

Respondents 369 of 548

2019 Employee Engagement Score

83%

Talent Attraction and Retention

WHA Group places great emphasis on attracting and hiring new talents while promoting the career advancement of existing staffs to promote the business growth. WHA Group sets up recruitment procedure to ensure that selected individuals possess the right knowledge, skills and abilities for the position while having the right mindset that would fit to WHA Group's culture. WHA Group ensures fair and non-discriminating recruitment process for both internal and external candidates by considering the candidate's potentials. WHA Group developed transition assistant program to promote career advancement and transition for existing employees. This includes job-rotation program, internal job opportunities, pre-retirement planning, and flexible work employment program.

In 2019, WHA Group had a total number of 557 employees of which 361 were male and 196 were female. 74% of WHA Group's employees are local people to the business operation and 100% of the employees were hired on permanent contract. To support the business plan, WHA Group recruited total 6 new positions.

	Male	Female
New recruitment	5	1
Internal opportunity	1	1

For existing employees, WHA Group retains well performing employees by ensuring fair employee performance review, promoting career advancement and providing necessary training to upskills the employees. As wage payment is the main interest of employees, WHA Group engages with external institution to assess its employee's payment against the market annually to ensure WHA Group remains competitive in labor market and leading businesses. Regarding employee performance appraisal, WHA Group implements Performance Management System to assess each employee's performance against their KPIs to ensure fair review and effective work.

Welfare and Benefits

WHA Group seeks to promote good living standard for the employees and their families. The Group therefore ensures the welfare and benefits provided to employees are appropriate and where possible, exceeds the regulation requirement. All employees were informed of their rights to receive the welfare and benefits at the beginning of their employment. All WHA full time employees will receive a standard benefit package consisting of life and accident insurance, health insurance (for employee and their registered family members), annual health check, uniform, provident fund, and financial assistant fund. The benefits applies to all employees regardless of their gender, age, and nationality.

In addition to the standard benefits, employees are allowed to propose benefits improvement through Welfare Committee and HR Department. In 2019, staffs proposed employee sport clubs which are sponsored by WHA Group. The Group considered the proposed suggestions and agreed to support the sport clubs therefor the staffs set up WHA Group employee sport clubs consisting of activities including yoga, fitness, boxing, and football.

Apart from the sport clubs, WHA Group promotes good health among employees and arranged 2 employee well-being activities in 2019. They are:

WHA Go Grow Goal!

WHA Group has organized "WHA Go Grow Goal!" activity with the objective to strengthen employee's relationships within the organization and encourages the employees to develop good health. During the event, there were many activities for all participants. One highlight activity was the special soccer match between Bangkok Office Team vs Site Team. This event was held in May 2019 at Bowin Arena, Chonburi with 190 employees from all business hubs.

Run for Blind #7

WHA Group coordinated to set up "We Run for Blind #7" as part of the Group's social program to support visually impaired persons while promoting the health of participants. The activity was held in September 2019 at Vachirabenjatas Park, Bangkok with 70 employees who happily participated and enjoyed the healthy activity.

Human Capital Development

Employees are paramount important factor for WHA's successful operation. Therefore WHA Group established employee training & development program to support the employees to reach their full potential and capabilities. The Group therefore identify training needs and sets up annual development program for the employees. The development program covers 4 areas:

- Management skills development e.g. ABDP Program and LDP Program
- Business and digital knowledge development e.g. Business Game program and Digital Transformation program
- Technical skills development
- Talent management e.g. Innovation Leadership program

In 2019, there were 12 in-house training programs and also public training programs for the Group's employees with total employee training cost of 7 million baht. The average training hours per employee was 28 hours per year per employee. The highlight training programs in 2019 are as follows:

Leadership Development Program

WHA Group set up three leadership programs for different level of employees. The first program is ABDP program, in collaboration with Thammasat University, which was developed for middle management. The program focuses on the middle management level of all business hubs to enhance and uplift their management skills. For senior management and executives, WHA Group set up LDP program to boost up their leadership competencies to support the achievement of WHA Group vision and strategy and as part of management succession planning. The program was a collaboration between the Group and Chulalongkorn University and was delivered to 90% of senior management and executives across WHA Group's 4 business hubs.

Innovation Leadership Program was an intensive program that WHA Group developed for our 45 key potential talents from all business hubs. The program started from May - Dec 2019 with the objective to enhance WHA Group business opportunities through young talented and develop talent pools. This program has also involved Executives to support as coaches, and project sponsors through the designated innovation projects.

The key learning values are classified at each business levels as follows;

1. Organization strategic level: the future leaders have execution abilities, strategic decision making and entrepreneurial creativity.
2. Business operation level: the participants will have skills of project management, customer and business communication, and technical and business knowledge.
3. Functional level: the participants will be able to prioritize task, manage multiple tasks, coordinate with team members, and manage resources.
4. Leadership skills: participants will enhance their leadership competencies, team management and interpersonal skill.

Functional Skills Development Program

In 2019, WHA Group has identified the competencies and development program for the staffs to improve their functional and technical skills and knowledge they needed such as Business Sales Negotiation, Business Games (strategy), ISO, and safety training. The department head and manager assessed the training needs of the staffs and identify the suitable program for their team staffs. There were total 150 employees across WHA Group who joined the program to improve their requisite skills for their work.

Corporate Culture

WHA Group has stand for the importance of the organizational culture and how the staffs embrace the culture and apply it on a daily basis. The Group sets clear values which contribute towards good behavior and work culture. The values are Advance, Champion, Resourceful, Partnership and Integrity. To ensure all staffs embrace the values, WHA Group initiated corporate culture activities, for examples, Team Building, Service Excellence Workshop, The Power of WHA Group Cultures, Staff New Year Party and other annual events.

The promotion of corporate culture through various communication and related activities has improved "WHA Group Core Value" score in 2019 at 84% .

WHA Group Corporate Culture

Human Rights and Labor Practices

WHA Group ensures its employee management complies with national labor laws and related regulations. The Group gives high importance to anti-discrimination throughout its operations and promote diversity in its workforce at both management and staff levels. All employees are provided with equal opportunity from recruitment process to career advancement. In addition, the Group ensure fair lay off with recorded process. Moreover, employees are allowed to express their opinion and propose suggestions to the management through Employee Committee or raise their concerns directly to their management or suggestion channels.

In addition, WHA Group respects human rights and applies its Human Rights Policy to all level of employees at every business operations. All employees must be aware of human rights related matters and value human dignity, freedom, and equality while comply with related international laws and standards. This is to ensure that the Group's business activities do not violate human rights of internal and external stakeholders throughout the business value chain. The policy also encourages suppliers and business partners to adopt and apply the human rights policy to their operations. WHA Group's Human Rights Policy addresses non-discrimination practice, human rights violations against stakeholders, human rights risk assessment and due diligence, human rights promotion, human rights communication, and reporting of human rights violations.

WHA Group started to communicate on human rights to all new employees as part of new employee induction program. The Group plans to communicate on human rights with all employees through activities and communication channels in 2020 to ensure all employees are aware of and understand human rights.

Whistle Blowing

WHA Group opens up to employees' suggestions and concerns to improve the Group's performance. The Group has developed a whistle blowing process with a mechanism to protect the whistle blower. All information about the whistleblower is kept confidential and will be limited to those involved in the investigation process. The reported case will be proceeded according to whistle blowing procedure in the Code of Conduct.

Occupational Health and Safety

WHA Group aspires to be Asia's leading developer of logistics properties, industrial estates, utilities and power, and digital platform delivering world class standard solutions to our customers with unyielding responsibility to environment and communities. To align with this ambition, WHA Group always prioritizes and proactively protects the safety and well-being of all employees and visitors to its premises. Furthermore, good occupational health and safety management is a robust preventive measure to managing and training employees on safety standards, fostering an internal safety culture, promoting employee confidence and morale to work with WHA Group. In addition, the good health and safety management also creates a positive corporate reputation as a safe corporation and reassures all business hubs' customers.

WHA Group occupies a large area with more than 50 strategic location in Thailand, inhabited by a multitude of multinational manufacturers alive with commuters visiting and leaving WHA Group area of around 200,000 people daily. These activities presents key stakeholders such as employees, contractors, customers and surrounding communities with risk of accidents in diverse forms, such as road related accidents, electrocution, fires, exposure to harmful chemicals and spills, and accidents from heavy machineries. As an industrial estate management, WHA Group's Occupational Health and Safety management is limited to common areas in the premises such as roads, electric poles, central water pipes, industrial estate boundaries, and WHA Group's buildings to ensure all of WHA Group businesses system is safe for all employees, contractors, visitors and surrounding communities.

WHA Group has a well-established group level occupational health and safety management team who develop, implement, and monitor health and safety procedures and controls to ensure integration of occupational health and safety practices into day-to-day operations across the 4 business hubs. WHA Group also has health and safety team on site at each industrial estate and the Industrial Estate Vice President holds the highest responsibility person for health and safety related matters. WHA Group also set up Safety Committee which consists of representatives from both management and employee representatives from all business hubs to regularly meet and discuss to improve workplace health and safety. WHA Group strictly abide by Occupational Safety, Health and Environment Act A.D. 2011 and all related rules and regulations, as well as, international safety standards to ensure that safety management is effectively managed.

WHA Group's health and safety general management approaches include employee safety training, monitoring of common area security, fire safety, emergency and response plan, occupational health and safety risk assessment, improvement of safety controls, and monitoring and reporting safety performance. These management approaches are applied to all WHA Group's operations and extended to cover contractors' activities that have high health and safety risks such as construction sites.

With the vigorous health and safety management system, there was 1 work related injury case in WHA Group's operations in 2019. The Group has put measure to prevent similar accident in the future.

Safety Incident

Year	2016	2017	2018	2019	Target
Number of incident	0	0	0	1	0

OHS Management System

WHA Group operates in more than 50 strategic location which presents the Group with the challenge to effectively manage and monitor occupational health and safety practices to minimize risks and accidents at each site. For this reason, WHA Group appointed a "Safety Department", led by the Group's Chief Operating Officer, to oversee all occupational health and safety management at all locations to ensure accurate compliance with all related national laws and regulations. The Group ensures all safety officers are qualified. In addition, WHA Group also applies international standards such as the NFPA 1901-A2003 standard for its fire trucks, which is beyond the compliance requirement of Department of Disaster Prevention and Mitigation. The strict compliance to the regulations integrates and fosters a strong occupational health and safety culture within WHA Group, safeguarding all stakeholders throughout the operations and contributing to meet WHA Group's zero incident goal.

To enforce a high standard of compliance to relevant laws, regulations and corporate wide policy, the safety department appointed safety officers at each sites to monitor integration of occupational health and safety plans. Safety officers are responsible for employee training on safety practices and procedures. This includes fire safety training which has always been conducted according to NFPA and OSHA standard that exceeds national minimum requirement and establishing Central Control Center in every industrial estate. To monitor the industrial estates' security, WHA Group utilizes security cameras to track visitors entering and leaving the industrial estate boundary.

Work Hazard Identification and Risk Assessment

To thoroughly manage health and safety, WHA Group conducts health and safety assessment throughout its business operations covering all activities in WHA Group's premises that can be performed by either employees or contractors and identify the hazards related to the tasks to find suitable preventative and control measures. To assure that all risk and hazard assessments are conducted in a systematic way and meet the Occupational Health and Safety standard, WHA Group ensures that all safety officers, responsible for assessing risk, holds Occupational Health and Safety certificate. The health and safety risk assessment is subjected for review annually or whenever there's change in the operations.

Risk Assessment Process

1. Define scope of work
2. Identify risk and hazards
3. Assess the risks
4. Prioritize risks
5. Issue preventative and control measures

As part of ISO 14000 standard, WHA Group's risk assessment process identified activities with significant hazards of which the Safety Department has applied control measures to minimize the risk and mitigate the impact. In 2019, result of the risk assessment shows that exposure to chemicals at water treatment plant, potential accident in construction work, and road safety (transportation and logistics activities) are the Group's primary activities that have high health and safety risks.

Safety Risks	Description	Mitigation measures
Exposure to chemicals at water treatment plant	Chemical such as Chlorine and Sodium Hydroxide are used in water treatment process and therefore the employees are exposed to the chemicals at workplace.	Provide suitable PPEs to employees, install Cl2 detector and monitor the effectiveness of implemented initiatives by conducting workplace chemicals monitoring and employee's specific health check which is done annually.
Potential accident in construction work	Accidents at construction sites many cause injuries or fatalities among the construction workers and WHA Group's employees from construction work risks such as falling from height, amputation of limbs, burnt, etc.	Developed contractor handbook and requires that the contractors always follow the safety standard. To manage safety in contractor work, WHA Group conducts Job Safety Analysis (JSA) which contains safety procedure and applies work permit system to ensure the contractors are capable to perform high safety risk tasks.
Road safety	Travel to work and road traffic in WHA industrial estates may pose risk of road accidents to WHA Group's employees, customers, and people who visits the premises.	WHA Group inspects, monitors and improves road conditions by developing the traffic control systems to ensure road safety for employees, customers and commuters in the industrail estates. The Group also set up safe driving campaigns and arranges driving training for employees by the Safety and Environment Club of every industrial estate.

Emergency Management

In case of emergency, employees can report all work-related incidents through the following channels; event submission form, complaint form, or directly report to their supervisor. These events will then be thoroughly investigated and taken action according to Emergency Calls Process. In extreme cases, employees can follow the Emergency Response Instruction Process, to remove themselves from situations they believe can cause injury or ill health. The incident will then be thoroughly reviewed by Safety and Security Department to protect employees from any reprisals and prevent future accidents from occurring again.

WHA Emergency Control Center

WHA Group establishes 9 Emergency Control Centers which are located at each of WHA's industrial estate to monitor and suppress emergency situation. The Emergency Control Centers are managed by occupational health and safety experts and equipped with fire control systems ready to operate at any time. In 2019, the Emergency Control Center stopped 1 emergency case in the factory located within the Group's industrial estate. In addition, the Emergency Control Center supported the local authority to stop 5 emergency cases in the surrounding communities.

Emergency Drills

WHA Group has annual emergency drill plan for different emergency events including firefighting and evacuation, hazardous chemicals spillage, traffic accident, flood, and emergency events relating to the factories within the industrial estates. All emergency drills are conducted and evaluated annually.

In July 2019, WHA Group hosted an emergency response drill for chemical spill scenario in a Full Scale Exercise (FSE) level 1 at WHA ESIE. The emergency response drill involved more than 80 people from Industrial Estate Authority of Thailand (IEAT), Department of Disaster Prevention and Mitigation, Department of Labor Protection and Welfare, local authority offices, local communities, customers, workers, WHA Group's employees, etc. The event has raised awareness of potential risks and prepared WHA Group's employees and stakeholders to manage chemical spill efficiently as it simulated all relevant processes for the event, for example, emergency reporting, first-aid, selection of appropriate PPEs, order and control, etc. The evaluation of the drill performance received 100% review score for all processes including communication, equipment, PPEs, reporting process, and timing.

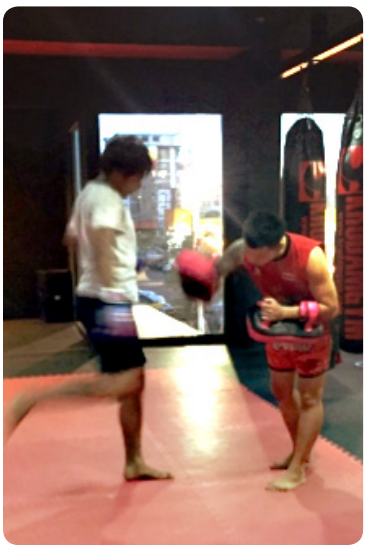
Road Safety

The road of WHA Group's industrial estates has high traffic as it is not only used by the business stakeholders but also the surrounding communities who use the industrial estate road as common travel route. WHA Group is aware of road safety risks and therefore assess road accident risks and develop control measures such as installation of CCTV to monitor and control traffic around the industrial estate areas. In 2019, there were total 148 road accidents from all WHA's industrial estates. The accidents resulted in 91 injured people and 5 deaths. The number of incidents increased due to the opening of new industrial estate and the increased number of people from the expansion of manufacturers in the industrial estates. The Group commits to reduce the number of road accidents and plans to apply road traffic innovation to reduce the accident rate.

Contractor Safety

WHA Group not only emphasizes on the safety of its staffs but also the Group's suppliers and contractors who perform activities at the customers' premises. All suppliers and contractors have to strictly follow the Group's safety requirement. Prior to work, the contractors will receive a training covering 3 areas; environmental policy, the premise's regulations, and safety standards. After the training, the contractors will receive a contractor card which will expire in one year from the issuing date. The contractors who perform short term work will receive a training but are not required to register for a contractor card which allows the contractors to perform their work one time only.






Employee Health and Safety

As part of the Employee Development Policy to foster a robust understanding and integrating occupational health and safety practice for all stakeholders, WHA Group provides training programs to educate employees about workplace safety and emergency responses. At present, the coverage includes; emergency drills, fire drills, evacuations, road accident control, flood control and chemical leak accident. New training programs are developed based on the risk assessment and changes in legal requirements.

The Group ensures all employees have access to medical health services and provides suitable annual health checkup program to all employees. In addition, WHA Group provides a health and accident insurance for all employees to ensure the employees have access to quality medical services when needed. All employees can suggest work condition improvement directly to supervisors, HR, and Safety Department.

Furthermore, the Group promotes employees' recreation activities by supporting employee clubs such as fitness club, boxing club, Yoga club, Football club, Badminton club, etc. to encourage good health and wellbeing of the employees.


WHA Safety Club

In addition, WHA Group values the opinion of stakeholders and therefore established the 'Safety Club', to encourage stakeholders from the 4 business hubs Including employees, contractors and customers to share opinions and stories about safety practices to WHA Group. The Safety Club meeting is conducted quarterly.

In 2019, there was 5 safety club meetings with total of 520 participants from all stakeholders, which raised issues, such as Traffic Improvement, confined space, BBS and Emergency plan etc. All issues have been reviewed thoroughly by the working team and resolved accordingly.

ENVIRONMENT DIMENSION

Environmental Impact Management

From day one, it has been WHA Group's policy and focus to ensure that its businesses, communities and nature co-exist in a harmonious and sustainable manner. WHA Group is aware of the necessity of environmental management and resource conservation to ensure the sustainability of the environment we operate in. WHA Group is continuously working towards a sustainable operation in a way that will not prolong environmental issues or have any impact towards the community. With this mindset, WHA Group continues to actively manage, monitor and work towards reducing its environmental footprint while implementing initiatives and projects that are in line with the Group's environmental policies, and complying with regulatory standards and requirements.

Environmental impacts from effluents and waste, emissions, wastewater discharged and resource conservation are all high priority issues throughout WHA Group's operations. These environmental issues lead to impacts towards the Company's business operations as well as to its stakeholders, including customers, suppliers and nearby communities.

WHA Group's effort to drive sustainable practice throughout its business operations is guided by the Environmental and Quality Policy, which was endorsed by Top management level. The Policy provides a guideline for environmental management that is consistent throughout across WHA Group's business hubs, and conveys the commitment to prevent and minimize environmental impacts whilst continue to improve environmental and quality management to conserve the environment. The Policy also ensures that WHA Group's environmental and resource management is in line with both international standards including, ISO 14001 and ISO 9001:2015 certification, and abides with the local regulations and laws.

Environmental Impact Assessment

To ensure compliance with applicable laws, rules, and regulations, as well as to limit WHA Group's impact on the environment, all of WHA Group's industrial estates have undergone the Environmental Impact Assessment (EIA) study. This assessment evaluates the impacts that the business may cause towards the environment and communities within 5 kilometers radius of the project premises. The requirements and conditions to conduct an EIA are stipulated under the Promotion and Conservation of National Environmental Quality Act, B.E. 2535 (1992). The EIA must be approved by the Office of Natural Resources and Environmental Policy and Planning (ONEP) prior to construction and operation. All of WHA Group's industrial estates have surpassed EIA approval.

Target
100% EIA Compliance

Central Control Center (CCC)

Since 2009, ESIE was the first industrial estate to develop an Environmental Monitoring and Control Center. The main objective of this implementation is to strengthen the effectiveness of environmental monitoring, assessment and data tracking process throughout the industrial estate's operation. In 2019, WHA Group created the Central Control Center (CCC), which combines all online monitoring approaches into one system comprising of the following:

1. Environmental Monitoring and Control Center (EMCC) focuses on 5 components:

1.1 Real-time Water Quality Monitoring Station (WQMS) monitors the treated wastewater quality, mainly on organic substances, COD and BOD parameters. This ensures that the water quality of all wastewater treatment plants comply with the standards prior to discharging into natural water sources. Any non-compliance with regulatory standards will generate an alert signal to inform relevant operators for immediate actions to pump and retreat until compliance is met.

1.2 Real-time Air Quality Monitoring Station (AQMS) monitors the ambient air quality specifically on Total Suspended Particulates (TSP), Particulate Matter (PM-10), Sulfur dioxide (SO2) and Nitrogen dioxide (NO2) parameters. Additionally, meteorological data, wind speed and wind direction are monitored. AQMS monitors the current air quality and can identify air pollution source.

1.3 Disclose Environmental monitoring results EIA per requirements . These indicators include ambient VOC quality, noise pollution, surface water quality and etc.

1.4 Provides a channel for factories within the industrial estates to submit their environmental reports, as required by the regulatory requirements, such as air emission quality via stacks, EIA compliance, risk analysis and boiler/steam generator inspection report. Industrial Estate Authority of Thailand can effectively monitor these reports through the system, which also helps reduce paper usage.

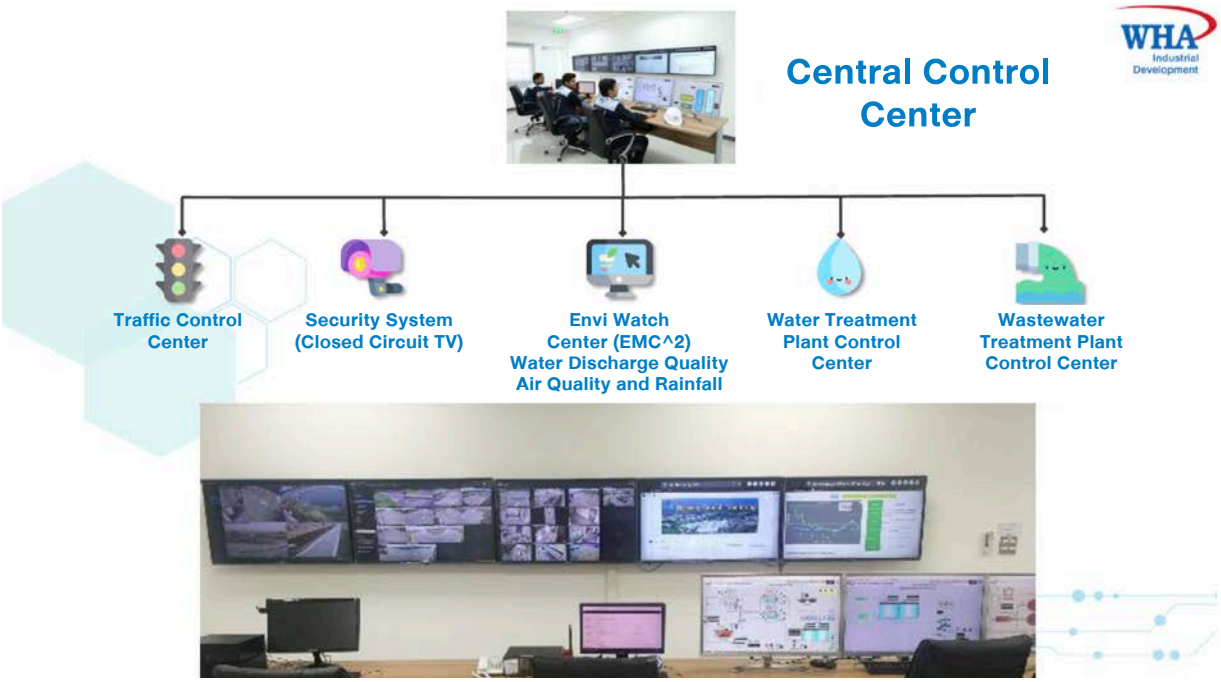
1.5 Complaint centre records and tracks the completion of the compliant handling process. Complaints that have been received via available channels will be logged into this system and notified to responsible personnel for handling actions.

2. CCTV (Closed Circuit TV) and Vehicle Management System (VMS) Centre

centralizes data from all CCTV installed at critical points around the industrial estates' common areas. This allows the emergency response team to easily spot and take immediate actions, if required. VMS is also used for collecting all traffic related information at the main entrance of the Industrial Estates, such as license plate, number and time of vehicle entry and exit, for better traffic management.

3. Water and Wastewater Treatment Plant Control Centre

controls the main equipment that manages water quality. This ensures that the quality are in compliance with the standards before being distributed to users or discharged to public waterway.



Environmental Standard and Performance

EIA Monitoring

WHA Group monitors all environmental performances in relation to the preventive measures, corrective actions and mitigation measures that are prescribed under the EIA requirements. These performances are incorporated as an EIA Monitoring Report and submitted to the Industrial Estate of Authority of Thailand, Natural Resources and Environmental Policy and Planning, local provincial Offices for Natural Resources and Environment, local provincial Offices for Ministry of Industry and other relevant Department of Local Administration every 6 months.

Environmental Complaint Handling Process

WHA Group pursues business operations with emphasis on environmental management that abides with the EIA requirements and the ISO14001:2015 standards. With this, WHA Group is open to receiving any suggestions or complaints that stakeholders have or may be affected by the damage caused by the Group's operational activities. Complaint cases can be reported via telephone at 038-954-543, WHA's website, through employees or directly to the Complaint Centre that is situated at every industrial estates managed by WHA.

In 2019, WHA Group received one case that is about a complaint raised between two factories in the industrial estate about odor problem WHA Group promptly managed the issue following the guidelines prescribed under ISO14001:2015 to identify the root cause and implement appropriate preventive and mitigation measures to prevent future occurrences. As a result, the Group was able to resolve the case and completed the handling process.

Eco-Industrial Town

Eco-Industrial Town is an initiative implemented by the Industrial Estate Authority of Thailand (IEAT) to promote and gear the economic development and environmental sustainability of industrial estates. WHA Group has been escalating its industrial estates' performances in physical, economic, environmental and social management aspects in order to achieve and become an Eco-Industrial Town.

In 2019, 4 out of 10 of WHA Group's industrial estates, including Eastern Seaboard Industrial Estate, WHA Eastern Industrial Estate (Map Ta Phut), WHA Eastern Seaboard Industrial Estate 1 and WHA Chonburi Industrial Estate 1, received the Eco-Champion Industrial Town Certification. These Industrial Estates were recognized for their outstanding commitment in operating a conscious business that drives sustainability, in line with smart and sustainable industrial town concept. WHA Group aims to escalate other industrial estates to achieve the Eco-Champion Industrial Town, and targets for WHACIE2 to achieve this award in 2021.

Part of the Environmental Good Governance Auditor

(White FLAG, Green STAR)

Environmental Good Governance is an award scheme set up by the Industrial Estate Authority of Thailand for factories who operate their businesses with excellent environmental and social performances. Factories are subjected to conduct open-house activities for the assessors consisting of the government officials, communities and industrial estate developers, to assess their manufacturing processes, pollution management procedures and social engagement programs.

WHA Group participated as one of the auditors to assess the factories in WHA Group's operational industrial estates. In 2019, a total of 43 factories in WHAEIE, ESIE, WHAESIE1 and WHACIE1 surpassed the surveillance and were classified at excellent level. Moreover, 20 factories that are located in WHAEIE were certified with the "White FLAG, Gold STAR" award.

Air Emission

As a leading industrial estate developer that occupies industrial factories, WHA Group is well aware that air emissions may have an impact towards the environment and the surrounding communities. Because of this, the Group regularly monitors the ambient air quality within WHA Group's industrial estates and ensures that related regulatory requirements regarding air quality are complied.

WHA Group abides with the air emission management approach as stipulated under each industrial estates' Environmental Impact Assessment Study. WHA Group strictly monitors and ensures that ambient air quality in the industrial estate and within 5 km radius are in accordance with the standards prescribed under the Notification of National Environment Board, No. 24, B.E. 2547 (2004), Re: Ambient Air Standard, Notification of National Environment Board, No. 21, B.E. 2544 (2001), Sulfur Dioxide in Ambient Air Standard and Notification of National Environment Board, No. 33, B.E. 2552 (2009), Re: Nitrogen Oxide in Ambient Air Standard.

WHA Group puts its best effort to lower pollution generation within the industrial estates. With this commitment, the Group is ensured to select and screen only industrial clusters that generate lower air emissions to reside within its industrial estates. This screening process is planned and mapped out since land purchasing agreement process with potential customers.

Ambient Air Monitoring

According to the requirements stipulated in the EIA report, industrial estates are subjected to monitor total suspended particulates (TSP), nitrogen dioxide (NO_2) and Sulfur dioxide (SO_2) parameters within ambient air. The monitoring stations are distributed throughout the common areas and within 5 km radius of the industrial estates. Real-time monitoring results are portrayed at the Environmental Monitoring & Control Center. These ambient air quality are submitted to the Industrial Estate Authority of Thailand every 6 months as part of an EIA monitoring report. In 2019, all ambient air quality results were found to be in compliance with the regulatory standards.

In addition, WHA Group also records all air emission data from factories residing in the industrial estates to ensure that their air inventory are in compliance with the Department of Industrial Work and EIA standards.

PM 2.5 Monitoring

Particulate matter sized generally 2.5 micrometers or smaller (PM2.5) has become a serious issue in Thailand during the past years. PM2.5 could potentially impact the health, especially to the respiratory system and lungs, of the people within the industrial estates and to the surrounding communities. To tackle this issue and ensure the safety of operators within the area, WHA Group conducted sampling and testing of PM2.5 within all of its industrial estates. Data were compared against the Notification of the National Environment Board, No. 36, B.E. 2553 (2010), and the results were reassured that the volume of PM2.5 were within the regulatory standard.

WHA Group also initiated requirements to prevent PM2.5 generation, such as burning restriction inside factory and other zones within the industrial estate. Besides this, WHA Group and IEAT implemented traffic campaigns to encourage factories to use shuttle buses that are in good condition, thus, resulting in less pollutant emission.

Waste Management

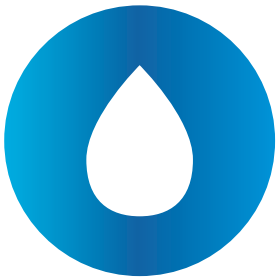
The rapid rising levels of urbanization and industrialization are resulting in enormous amount of waste generation. To address this challenge and to serve the growing number of industrial customers in WHA Group's Industrial Estates, the Group is putting continuing efforts to reduce waste generation as well as to ensure proper waste management practices are being carried out.

WHA Group's efforts for waste management is governed by the Environmental Policy and the Environment Impact Assessment study.

As an industrial estate developer, WHA Group does not have the authority to control the factories' waste management practices. Nonetheless, a Waste Management Committee has been appointed to oversee and ensure that proper waste management practices, in accordance with the regulations, are being carried-out by industrial factories within the industrial estates. The Committee takes proactive steps to conduct audits of the waste disposer and factories, and presumes other necessary actions as inquired by the Management. Additionally, WHA Group initiated 3R waste separation campaigns to promote factories to reduce the volume of waste generation for disposal. As a result, the factories segregated their waste and were able to collect up to 817,000 tons of recyclable waste or about 65% of total waste generation in 2019.

WHA Group manages waste that are generated from its business operations, such as from the industrial estates' common premises or offices, by raising its employees' awareness on the importance of reducing waste generation and promoting the principles of reusing and recycling.

Reduce



Reuse

Recycle

Waste generated from office operations and sludge from the wastewater treatment system accounts for the majority of waste in WHA Group's environmental footprint. The Group has chosen modern sanitary landfill as an approach to manage its waste which is serviced by Waste Management Siam, an authorized waste disposal contractor. WHA Group has in place a system to track details of waste disposal, and regularly notifies the Department of Industrial Works prior to transporting waste outside of its facilities. In order to ensure sludge waste management will be continuously improved, WHA Group sets the target to reduce 1,000 tons of sludge waste to landfill by 2022. In 2019, WHA Group generated 1 ton of hazardous waste, mainly light bulbs that contains mercury and chemical containers, and 2,483.6 tons of non-hazardous waste from its wastewater treatment system.

Target 2022

Reduce 1,000 tons of water sludge to landfill

Reduce 50% of hazardous waste to landfill

E-Paperless

WHA Group continues to practice waste minimization whenever practical to reduce the amount of non-hazardous and hazardous waste generated from its operations. To amplify WHA Group's efforts to drive sustainable practice throughout its businesses, the Group is committed to reducing paper use up to 25% by 2022 to align with the Group's Digital Transformation goal. In 2019, WHA Group initiated 'E-Paperless' program that applies to all business hubs to encourage the usage of technological appliances, such as tablets, instead of printed materials during office meetings, thus, reducing paper waste generation. A new platform was developed for relevant personnel to access and retrieve documents for meeting materials via their tablets. In 2019, the program was able to save 202,600 document papers, or 712,646 THB of printing expenses from WHA Group and avoided emissions around 2,020 kg CO_2e.

Plastic Waste Reduction

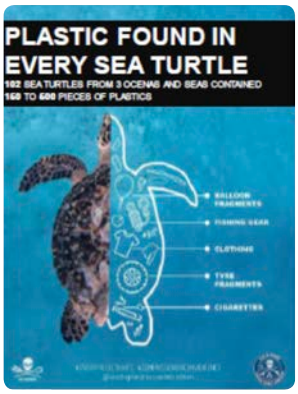
WHA Group is aware of the global ban of single-use plastic products as it causes severe impacts to wildlife and oceans. In October 2019, WHA Group stopped serving plastic bottled drinking water to its guests and visitors, therefore, were able to reduce 20,487 bottles of plastic waste and has set its 2020 target to save cost from purchasing plastic bottled water by 727,000 Baht.

Water Sludge Recycling Project

Sludge waste generated from the Group's water and wastewater treatment plants are all currently disposed by landfill method. In 2019, WHA Group conducted a research study to add value and utilize these sludge waste as fertilizers instead. The fertilizers are produced through aerobic composting condition of mixed sludge waste and water hyacinth or other plants. This study is currently still undergoing for fertilizer quality analysis.

Sort N' Save Project

The Sort N' Save project was initiated in 2019 by one of the winner groups under WHA Innovation Leader program. The objectives of this project are to increase environmental awareness amongst WHA Group's employees and to explore innovative business platforms under the circular economy concept. Over 4 months into the project implementation, the project team has not only set up centralized recycling facilities at two office buildings, but has also launched numerous campaigns to increase awareness and enhance employees' behavior towards recycling and waste reduction. These campaigns were conducted via multiple communication tools such as posters, bulletin board, Line application and email. The project received great performance in 2019 as office recycling rate increased approximately by 50%.



In October 2019, “The 5-Day Challenge with Sort N’ Save” was initiated to increase the employees’ environmental awareness across the 4 business hubs. The campaign encouraged the participants to take a creative selfie of themselves with assigned eco-friendly items to earn a daily cash prize. The campaign received an overwhelming response rate with 98 pictures submitted as well as positive feedbacks.

The Sort N' Save project also targets to reduce the use of single-use plastic and foam. WHA Group distributed cloth bags and water tumblers to all employees to replace single-use plastics cups and bottles. In 2019, the Group collaborated with a local community office to give out cloth bags to 50 households in Khao-Khan Song sub-district, Chonburi province. Additionally, WHA Group also conducted training programs to raise the community members' awareness on the impacts of single-use plastics and foam containers, and provided guidance on appropriate behaviors to help reduce environmental impacts. In 2019, the training program was conducted at Chompon-Chaopraya sub-district in Rayong for 50 students and 75 students in WHASIL zone.

The Sort N' Save project has set future plans and phases with larger scope targeting WHA Group's stakeholders namely, employees, business partners and communities.

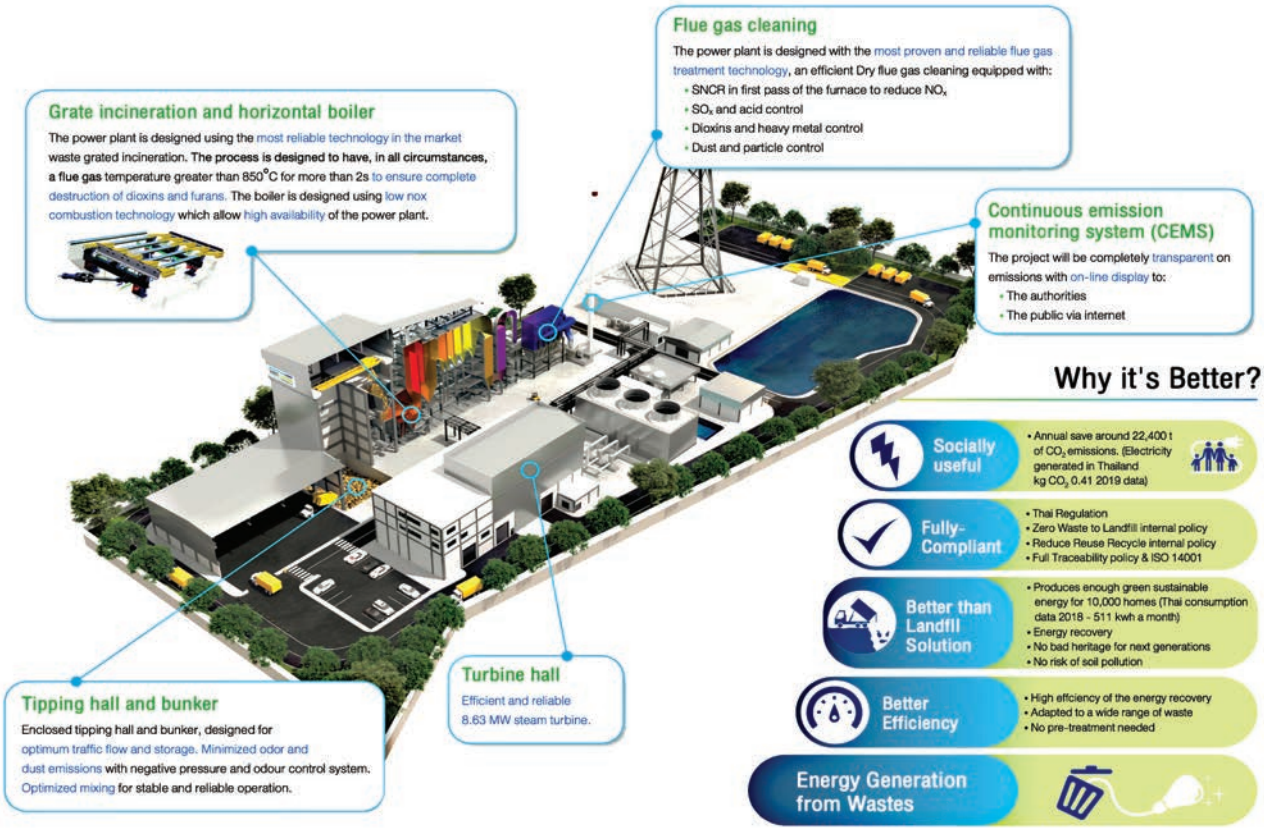
Waste-to-Energy Power Plant

Generating alternative fuel from waste is an active and responsible way of waste management while also providing benefits to the business, community and wider environment. In 2019, WHA Group has invested in a Waste-to-Energy Power Plant, known as Chonburi Clean Energy (CCE) project, along with two other renowned and committed shareholders: Glow Energy and SUEZ. This project is in line with Thailand's Alternative Energy Development Plan 2015—2036 which proposes a target of using 30% renewable or green energy of the total energy consumption by 2036.

CCE is an eco-friendly, advanced waste-to-energy power plant that is located at WHA Chonburi Industrial Estate 1, in Chonburi province, Thailand. The CCE's total project investment is approximately 1.8 billion THB. The power plant has a capacity to generate electricity by converting waste to energy source at 400 tons per day, or approximately 100,000 tons per year. This enables the maximum output of 8.63 MW of electricity per year. This power plant is equipped with the most advanced technologies in terms of reliability, sustainability, stability and environmental protection. It uses a safe and environmentally sustainable waste incineration technology and high standard air emission control systems. CCE is the first industrial waste to energy facility in Southeast Asia to meet European emission standards, which is more stringent compared to local standards.

Emission	Unit	EU Regulation	Japanese Regulation	Thai Regulation	CCE selected thresholds
			(Dry Gas 25 c, 7% 02)		
NO_2	ppm	136.7	150	180	136
SO_2	ppm	24.6	30	30	24
HF	ppm	1.6	-	-	1.6
HCL	ppm	8.6	25	25	8
Dioxins/Furan	Ng/Nm^3	0.13	0.13	0.1	0.1
Dust	Ng/Nm^3	12.9	24	70	12.9

The project's construction work began in late 2017 and was ready for commercial operation in November 7, 2019. During commissioning period from November to December 2019, air emission monitoring results obtained from the installed Continuous Emission Monitoring System (CEMS) portrayed that all parameters namely, Total Suspended Particulates (TSP), Nitrogen Dioxide, Sulfur Dioxide and Hydrochloric Acid, were in compliance with the EU standards.



Biodiversity

As an industrial developer that houses factories on vast areas of land, WHA Group is well aware that their operations may cause impact to the environment and biodiversity of living organisms, species, habitats, and the ecosystem in the surrounding areas. As such, WHA Group places great importance to manage both environmental impacts and mitigate any risks of intervening with the ecosystem. WHA Group aims to ensure that all of their industrial estates are cautiously operated to minimize the impact on biodiversity and, where possible, conserve biological diversity of the natural ecology nearby to ensure that they persist to the future.

Management approach towards biodiversity protection is defined in WHA Group's Biodiversity Policy. Additionally, Environmental Impact Assessment (EIA) were carried out to identify any drivers that may cause changes or impacts to the surrounding biodiversity due to such intervention, and appropriate management approach were identified.

Industrial estate is one of the businesses that is subjected to conduct an Environmental Impact Assessment (EIA) study. This assessment evaluates all of the potential environmental and social consequences within 5 kilometers radius of the project, including impacts to high biodiversity value area. Details regarding the type of operation, size, proximity to protected area and geographic location of the project are all considered in the assessment. If any impacts to the biodiversity around the premises are identified, the assessment will include mitigation measures or management actions that will protect the ecosystem. This includes conducting a stakeholder engagement to inform and acquire their comments for project operation. The project developer is obliged to follow through with the prescribed actions throughout its project phases, from construction to operations.

All of WHA Group's 10 operating industrial estates have undergone environmental impact assessment study, and 2 were found with high biodiversity risk. These two industrial estates, WHA CIE2 and WHA ESIE2, are located near Khao Khiao-Khao Chomphu Wildlife Sanctuary. As a result, the two industrial estates have to take precautions and follow up with the mitigation measures that are prescribed under its EIA study, such as, to maintain discharged wastewater quality and to reuse more treated wastewater. Biodiversity impact has to be reassessed very two years to investigate the impacts of industrial development on forest resource, wildlife resources and water biological resource.

Moreover, WHA ESIE4 also monitors the water ecology of the canal that the industrial estate discharges treated wastewater into. Monitoring is conducted twice a year during dry and rainy seasons to study the water diversity of phytoplankton, zoo plankton, aquatic animals and aquatic plant from upstream to downstream of the treated wastewater discharging point. The results are shared to relevant authorities and also reported to the EIA committees of Industrial estate.

Climate Change and Energy Management

Climate change is becoming a serious threat in a global scale as it leads to significant impacts to the environment, social and economic aspects. WHA Group recognizes such outcome as serious risk that may lead to business disruption if no actions are taken to prevent its occurrence. To tackle this challenge, WHA Group assesses and proposes mitigation measures for any risks that are imposed by climate change towards the Group's value chains and the community it serves. Furthermore, WHA Group strives to support the development of clean energy, contributing to meet Thailand's ratification of the Paris Agreement and Thailand's Nationally Determined Contribution Roadmap on Mitigation 2021-2030 with target of reducing the country's greenhouse gas at 20% by 2030.

Among WHA Group's business hubs, the industrial estate development business and power and utility services contribute the most indirect emissions (GHG Scope 2), making up the majority of the Group's environmental footprint. To commit to reduction of Scope 2 emissions, WHA Group targets to increase the use of clean energy, solar power, to 5% of 2018's grid electricity consumption by 2025.

At the same time, an amount of insignificant direct emissions (GHG Scope 1) are generated from the Company's own electricity generators and vehicles. WHA Group has taken broad approaches to manage its energy footprint as energy efficiency improvements lead to reduction of GHG emissions.

WHA Group manages climate change risks by conducting risk assessment that covers climate change impact that may cause disruptions to its business operations. At the same time, the Group contributes to reduction of climate related impacts by implementing energy efficiency management and promoting use of solar power in its operations and among the customers.

Solar energy target:
Increase use of solar energy to 5% of total 2018 WHA industrial estate energy consumption.

Climate Related Risk Assessment

WHA Group conducts annual climate related risk assessment as part of WHA Group's Enterprise Risk Management to identify significant risks, evaluate the effectiveness of in-placed mitigation measures and determine additional measures to address the challenges imposed by climate change. The risk is revised every year and the actions or measures corresponding to the risk assessment results are tracked until completion. Furthermore, WHA Group analyzes the geographical setting of each industrial estate to ensure that its location can withstand climate change impacts, such as, droughts or floods.

The 2019 industrial estate operation (IEO) assessment shows that natural disaster, such as flood and droughts, is identified as a risk associated with climate change that will have high impact towards the operational activities of industrial estates, for example, business disruption and damages to operational facilities. The assessment result indicates that the current measures are not sufficient to mitigate the impact of the natural disaster and following additional actions should be taken:

Risks	In-placed Mitigation Measure	Additional Mitigation Measure Identified and Implemented
Flood	• Dykes and water pumps that have been through requlary maintain in good conditions are available.	• Development of a Flooding Prevention System and Water Situation Report. • Communicate the results of the Flooding Prevention System and Water Situation Report is reported to the specific industrial estate's manager on a monthly basis.
Drought	• Raw water reservoir are available. • Water volume in the reservoir are regularly monitored.	• Build additional water reservoir • Monitor water availability in Rayong and Chonburi provinces, Thailand. Results are internally distributed within the industrial estates located in those regions.

Energy Management

WHA Group sets forth an Energy Conservation Policy that are adhered by all employees and facilities that are characterized as a 'Control Building' by the Building Control Act, B.E. 2540 (1997) and Promotion and Conservation of National Environmental Quality Act, No. 2, B.E. 2550 (2007). The Policy states that these buildings are to carry out energy conservation programs. Furthermore, an Energy Committee was appointed in May 2019 to take proactive steps and be responsible for overseeing that energy is efficiently conserved and managed throughout WHA Group's business operations. The Energy Committee is composed of representatives from different departments of operation.

As an industrial estate developer, WHA Group does not have the authority to enforce manufacturing factories to reduce their energy consumption. However, WHA Group can control and conserve energy usage within the common areas of the industrial estate premises. WHA Group has been continuously implementing energy conservation measures for 5 years and were able to reduce electricity consumption by 1,147,467 kWh or equivalent to avoiding of 667.9 CO_2e tons of GHG emissions through various initiatives as described in the following sections.

In 2019, WHA Group set the target to reduce electricity consumption from lightings of industrial estates' common area and building to 3% by 2025 compared to 2018 as the base year or less than 92.8 kWh/Rai.

Energy consumption target for lighting system in WHA industrial estates

Target 2025
Less than 92.8 kWh/Rai

Replace street conventional lamp bulbs with LED lighting

Use smart solar power for flashing light system

Energy Saving

Energy Saving in Common Premises

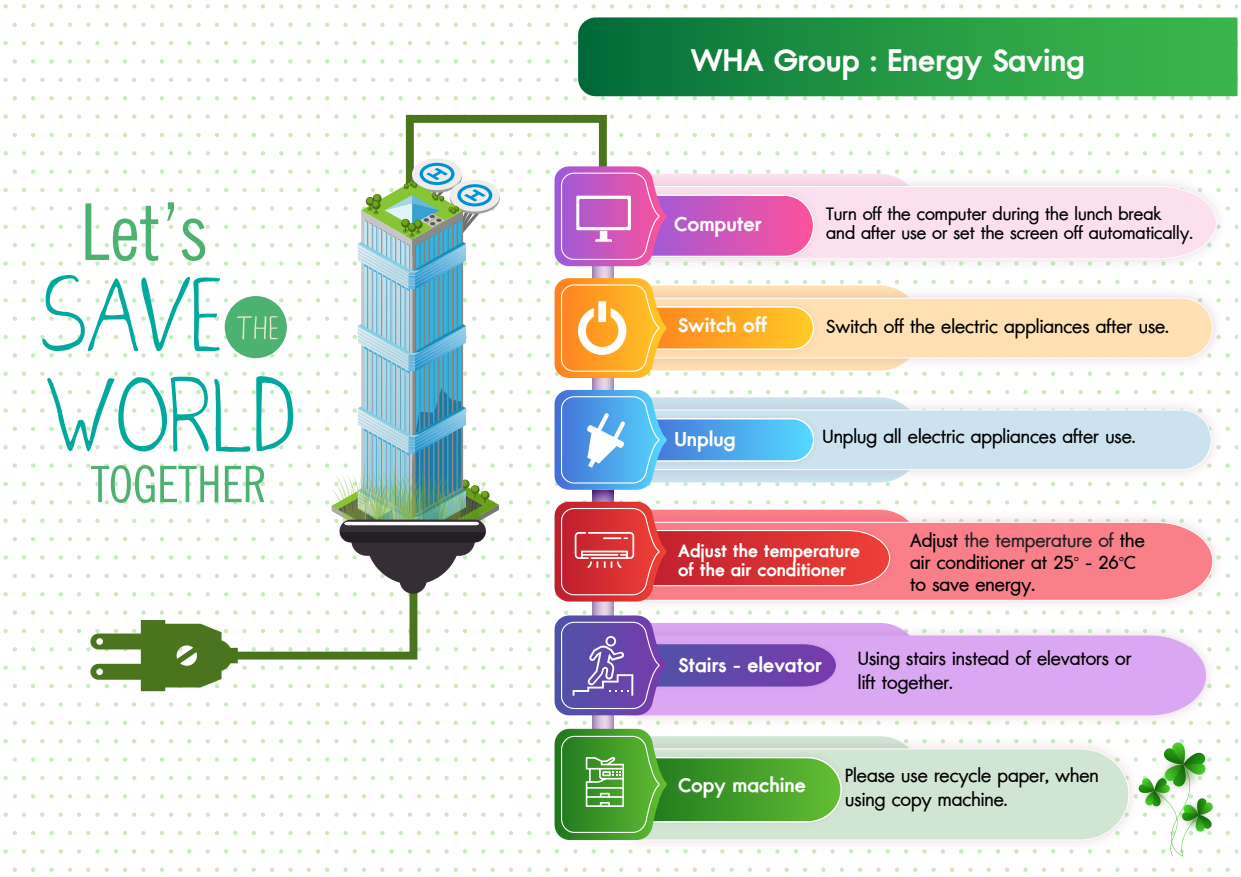
WHA Group and implemented energy conservation projects to reduce energy consumption within the common premises of the industrial estates. Street lighting systems within the common premises of the industrial estates is one of the main sources that requires the highest energy consumption. To tackle this challenge, the Group have replaced a total of 5,450 conventional lamp bulbs with LED lighting sets in all of WHA Group's logistic properties and industrial estates since 2016. LED lighting sets can save up to 50% of energy consumption while also saving maintenance cost in the long term. Apart from that, WHA Group continuously saves energy by implementing additional energy conservation programs at the industrial estates, which resulted in a total energy saving of 76,193 kWh in 2019. These programs include replacing LED lighting sets at offices, changing air conditioning appliance from central cooling air conditioner type into stand-alone air conditioning type, and closely monitoring and maintenance of electrical devices. Moreover, smart solar powered street lighting systems were installed throughout WHA Group's industrial estates.

Let's Save the World Together

Apart from the industrial estates, WHA Group also places importance on energy reduction within all of its business hubs. For instance, all of the business units' head offices are currently using LED lighting sets. WHA Group initiated the "Let's Save the World Together" program to encourage all employees to save energy by turning-off electrical appliances when not in use, use stairs instead of elevators and adjust air-conditioners to appropriate temperatures.

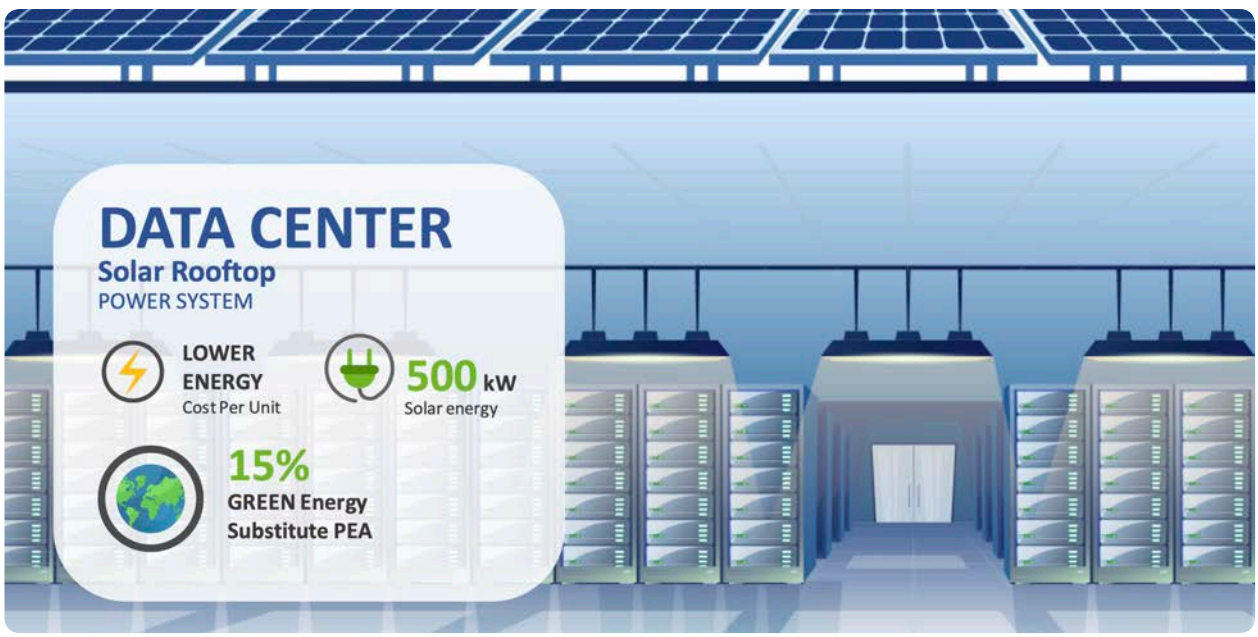
Let's Save the World Together

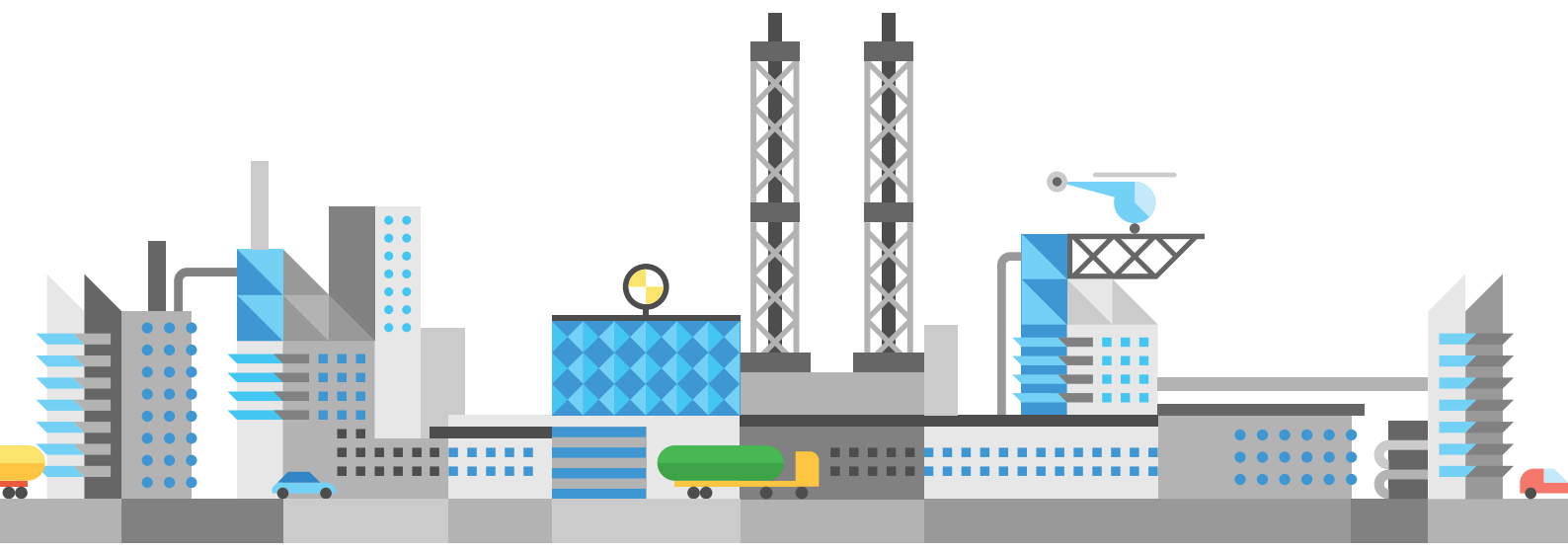
Computer	Turn off the computer during lunch break, after use or set automatic sleep mode
Switch	Switch off all lightings and appliances after use
Plug	Unplug all electric appliances after use
Air-conditioner	Set the temperature at 25-26 °C
Elevator	Use stair for low level floors and wait for your colleagues to take the elevator with you
Copy machine	Use recycle paper and print on both sides of the paper



Energy Efficiency at WHA Data Center

WHA Group's Data Center, which is operated by WHA Infonite, utilizes the hot-aisle containment over cold-aisle containment method for its cooling system. The system is energy efficient as it can save up to 21% of annual cooling system energy cost, corresponding to a 15% reduction in annualized power usage effectiveness (PUE). Apart from this hot and cold aisle design, WHA Group also installed solar panels on the Data Center rooftop to supply electricity for its use, which substituted about 15% of the grid electricity.





Solar Energy

Many warehouses and industrial factories, both inside and outside of WHA Group's industrial estates, are portraying increased interest in solar energy. Solar rooftop installations are part of the renewable energy solutions that can lower operating cost while at the same time contribute to a better environment; avoiding GHG emissions from conventional electric power. WHAUP has installed and operated solar power system on rooftops of WHA Group's warehouses, customer's factories in industrial estates, carparks and data center.

Solar Energy in WHA Group

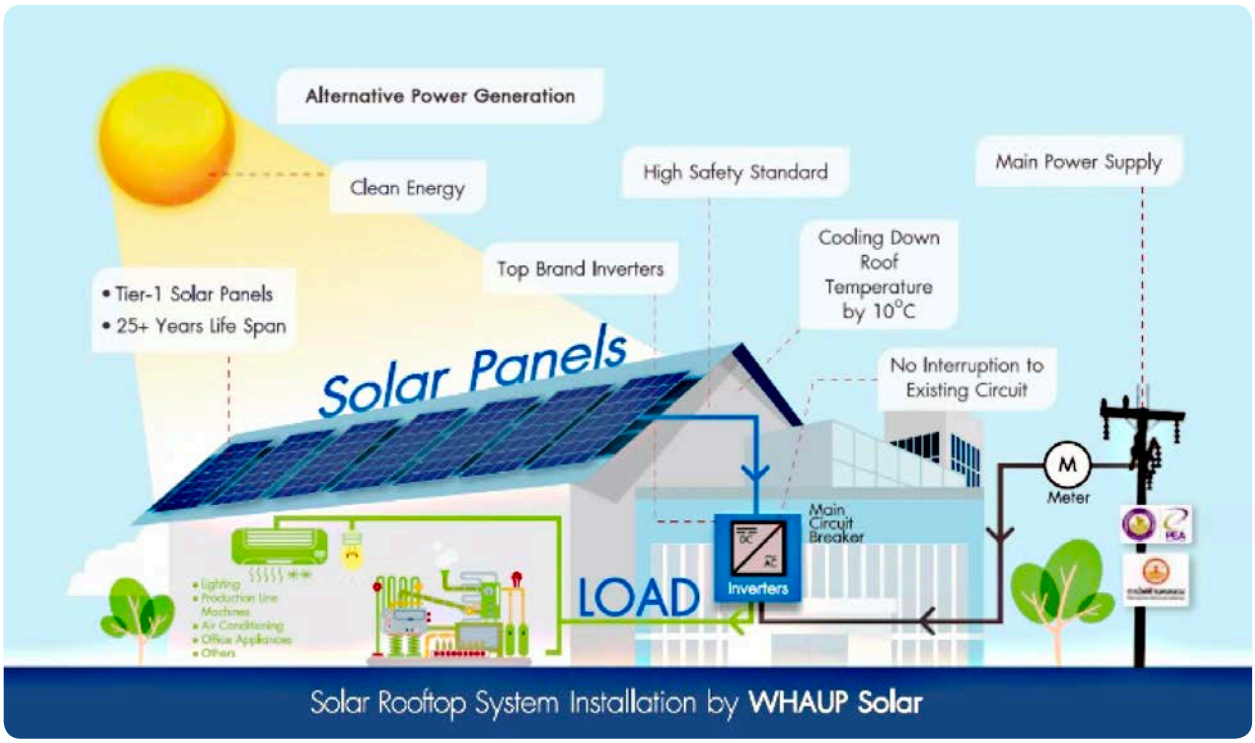
WHA Group is increasing the use of renewable energy within its operations by installing solar rooftop systems. WHA Group's Data Center is installed with solar panels, with a generation capacity of 582 KW Solar rooftops are also installed at WHA Group's water treatment facility in WHA Eastern Industrial Estate and at the industrial estate plazas' car parks. These installations generated 803,470 kWh of renewable energy and reduced GHG Scope 2 emission by 468 tons CO2e, thus, saving 2,811,500 Baht from buying conventional electricity. Additionally, WHA Group is installing three more solar carparks at the plaza area (WHA Plaza) which will be able to generate about 368 kW of solar energy. This project is scheduled for completion in 2020.

Promoting Clean Energy to Our Customers

WHA Group is gearing forward on this environmentally friendly platform to all industrial customers within the industrial estates. WHAUP offers an all-in solar rooftop service package for customers in Thailand including permitting, design and engineering, construction and installation, as well as operation and maintenance throughout the contract period. By end of 2019, WHAUP has completed installing solar rooftop projects to multiple customers, generating a total of 7,073 MWh of electricity for their operational use with a cost saving around 912,085 Baht from the client's electricity bill. The solar rooftop service has helped the customers to reduce their GHG scope 2 emission by 4,117 tons CO2e when compared to conventional electricity consumption.

WHA Group is committed to a long-term target to provide solar power and has signed solar power purchase agreement of 100 MW by 2022.

Year	Performance	Target		
	2019	2020	2021	2022
Installed Capacity (End of Year) (MW)	30.8	40	50	100
GHG Emission Reduction (tons CO2e)	4,585	25,470	33,119	48,264



Thailand's Largest Solar Carpark

During late 2019, WHAUP signed a contract with SAIC Motor Company — CP Co., Ltd. to install a solar carpark facility on their manufacturing plant's car park. The project covers a total roof area of 31,000 square meters that will provide shading for approximately 2,000 vehicles and generate a total electricity of 4 MW for the plant's consumption. This project is Thailand's largest solar carpark that will generate an average annual revenue of THB 20 million throughout the 20 year-contract.

WHAUP's fully-integrated service encompasses the entire project development processes throughout the contract period. Customers can fully rely on the expertise and professionalism of WHAUP's working team as they have long experience in providing energy and utility needs. This solar rooftop service will help customers save energy costs as well as to fulfill their environmental targets.

Water Management

Water Management

The expansion of industrial operations and the constantly growing population are putting more strain on world natural resources. The demand for water resource increases in both industrial sector and households, but water availability is becoming more erratic and extreme due to rapid consumption and climate change impacts. WHA Group affirms water is a valuable resource in the ecosystem and is a key natural resource in the Group's operation. Thus, WHA Group commits to conserve and manage water resource to its absolute abilities through reduction of water consumption and minimizing adverse impacts on water sources in order to ensure its business continuity and preserve the availability for future generations. WHA Group strictly abides with the regulatory standards and promote water reuse and recycling in its operations to ensure that the Group's water supplies meet the customers' requirements for their operations.

As water is a critical shared resource for WHA Group's operation and surrounding communities, the Group puts great effort to manage water supply wisely. The central industrial water supply and wastewater treatment facilities in all WHA Group's industrial estates are managed by WHAUP. WHA Group finds ways to minimize water withdrawal by recycling approach while also ensures the quality of discharged wastewater to prevent negative impacts to the environment.

As a basis for management, WHA Group strictly adheres to effluent standards as prescribed under the Ministry of Natural Resources and Environment, Effluent Standard for Industrial Factories, Industrial Estates and Industrial Zones, Industrial Estate Authority of Thailand Act, B.E. 2522 (1979) and Factory Act, B.E. 2535 (1992). This is done through regular monitoring of water related parameters as prescribed in Environmental Impact Assessment (EIA), and reporting the results to the Industrial Estate Authority of Thailand as well as to the Office of Natural Resources and Environmental Policy and Planning every 6 months.

In addition, the Company also conducts monthly sampling of wastewater generated from factories in the industrial estates to prevent any harmful contaminations to common water drainage, and to ensure that its central wastewater treatment system can operate at its design capacity.

Furthermore, WHA Group cooperates with stakeholders, namely nearby communities, for the synergy of water and environmental protection measures. The Company signed an MOU with Chulalongkorn University's Faculty of Engineering, Pluagdang Sub-District and Laemchabang Municipality during 2016 — 2018. From then on, the Company successfully initiated a corporate CSR program relevant to water conservation, known as "Clean Water for Planet", in 2016. This program is a long term commitment with full support from top executives, with the ultimate goal to raise awareness and to develop a better understanding of environmental care among communities in a sustainable manner.

Water Supply

Water is a critical component to WHA Group's business as it offers total solutions for industrial water procurement and wastewater treatment. Water supply in all WHA Group's industrial estates is supplied by raw water private supplier and from reservoirs that belong to the Royal Irrigation Department in Rayong province, Thailand. Additionally, water is also sourced from WHA's on-site reservoirs.

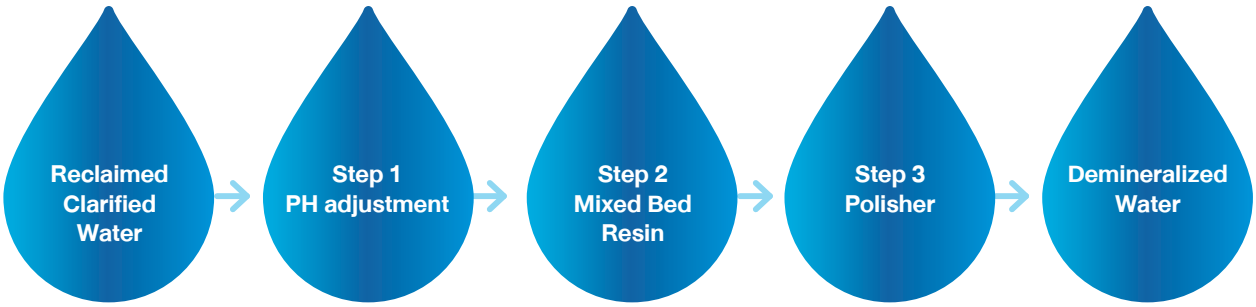
The capacity of each on-site reservoir differs depending on the industrial estate that it situates, but the reservoir that has the highest storage capacity at 530,000 m^3 is located in Eastern Seaboard Industrial Estate (Rayong). Moreover, WHA Group's provided Water Reclamation Plant that utilizes membrane technology to further treat wastewater from the wastewater treatment plant, and distributes to industrial users at a quality that is equivalent to the industrial water grade. Up till now, WHA Group has the capability to reclaim wastewater to industrial users at 3,650,000 cubic meter per year and in the process of expansion to 11,000,000 cubic meter per year by the end of 2020. This constitutes to 15% of total water resources needed in all industrial estates.

In the case where water shortage is anticipated, the Group will hold a meeting with both its water suppliers and users to notify about the water situation, and cooperatively implement solutions to tackle the crisis. As well as being a part of the Water War Room team together with public and private sectors to establish measures during the risk of drought such as wastewater reclamation for recycling wastewater to use as industrial water and to find alternative raw water resources from potential local or private agencies to supplement the water supply during the crisis.

In 2019, the ratio of water supplied from external source is reduced to 80% of the total water consumption. The other portion of water source is from WHA Group's on-site reservoirs, 3R programs and Water Reclamation project.

Water Reclamation

In 2017, WHA Group, through WHAUP, started the first wastewater reclamation project in WHA Eastern Industrial Estate (Map Ta Phut), located in the Eastern Economic Corridor (ECC) of Thailand. The wastewater reclamation plant has a treatment capacity of 7,500 m^3 per day or 2.7 million m^3 per year and has been expanded to 9,000 m^3 per day or 3.3 million m^3 per year at the end of 2019. This expansion includes the addition of Micro Filtration (UF) and Reverse Osmosis (RO) membrane technologies that is utilized for treating industrial wastewater into clarified water. Clarified water is in better quality than water that are produced from the conventional method of coagulation and sand filtration, and can be used in normal operations in many industries. In 2019, WHA Group advanced the reclamation project by initiating a water demineralization process at WHA EIE. This process further treats the reclaimed clarified water to high purity water, known as de-ionized water or demineralized water, by removing all minerals through ionic exchanger and polishers as depicted in the following process.



Step 1

Clarified water from the water reclamation project undergoes pH adjustment to be suitable for mineral removal to produce highest purity water.

Step 2

Mixed bed resin is a process to pass water through ionic exchangers to remove minerals

Step 3

Polisher is the final mineral removal process prior to distribution to customers to ensure the quality meets the requirements

With the implementation of the water reclamation, the Group were able to reduce and minimize around 3.7 million m^3 of total water withdrawal and water discharge in 2019.

In 2020, WHA Group plans to expand the capacity of water reclamation plants in EIE by 15,000 m^3 per day or 5.5 million m^3 per year and ESIE (Rayong) 5,200 m^3 per day or 1.9 million m^3 per year.

Treatment Capacity

10,000

cubic meters per day

Membrane technology will help save and decrease wastewater discharge of around

3.7 million

cubic meters per year

Water Recycling

WHA Group recycles treated wastewater from the wastewater treatment plant for use within the industrial estates' common areas, such as, cleaning purposes or watering plants. This has reduced the amount of water withdrawals from external water sources by 2.8 million m^3 or substituent to 3.7% of total water withdrawal.

Wastewater Treatment

WHA Group provides wastewater treatment and management services to manufacturers located in WHA's Industrial Estates across Thailand. Each industrial estate deploys a different wastewater treatment technology that is most suited for the customers' industrial activities, such as activated sludge system (AS), aerated lagoon system (AL), and the hybrid rotation biological contactor (Hybrid-RBC) system which is the combination of Rotation biological contractor (RBC) and Activated sludge (AS). Hybrid-RBC system can treat wastewater that contains higher organic loading rate from both suspended microorganisms in the activated sludge and biofilm on the rotational biological contractor when compared to other treatment methodologies. Additionally, Hybrid-RBC system can also increase aeration to the biofilm formed on RBC which results in greater wastewater treatment efficiency. WHA ensures that used water by manufacturers meet the standards imposed by the Ministry of Industry before being discharged into the central wastewater treatment system of each industrial estate. This is carried out as WHA conducts sampling of the manufacturer's effluent once a month. Once used water are treated via WHA's central wastewater treatment system, water quality is thoroughly inspected against the Ministry of Natural Resources and Environment, Effluent Standard for Industrial Factories, Industrial Estates and Industrial Zones before being discharged into natural sources or recycled for other purposes, such as watering plants or feed into the reclamation project. The monitoring results are presented to the Industrial Estate Authority of Thailand as an Environmental Impact Assessment (EIA) Report once every 6 months. Based on the record of wastewater quality in 2019, all monitoring parameters were in compliance with the standards.

In addition to maintaining water quality within its facilities, WHA Group is aware to protect downstream water sources and the wider environment. This is conducted as the Company monitors the quality of nearby surface water bodies, located nearby the industrial estates, on a regular basis.

Constructed Wetland

Since 2016, WHA Group launched a Corporate CSR Project, known as “Clean Water for Planet”. The main objective of this program is to raise awareness, create a better understanding and highlight the importance of water in order to instill a sense of responsibility among the community members to take care of their precious natural resource. The Project comprises three key activities:

1) Wastewater Training Program: Set up a basic curriculums to train students and local governments to understand easily about wastewater treatment operations. The aim of this activity is to customize training programs for each local communities that may have wastewater treatment facility but cannot operate functionally.

2) Real Learning Center: Provide field trainings for environmental internships to gain practical experiences with various types of wastewater treatment systems and to learn about the industrial environmental management.

3) Community Project: Develop wastewater treatment utilities for communities that are nearby the industrial estate.

One of the most outstanding achievements to-date is the Wastewater Management and Treatment facility, located close to Eastern Seaboard Industrial Estate (ESIE), Rayong province, Thailand. This constructed wetland project is a natural technology that is eco-friendly, cost-effective, and is inspired by H.M. King Bhumibol Adulyadej in using biological plants and microorganisms to naturally treat the water quality. It treats surface water from upstream of Hin Loi Canal that passes through dense community areas. This constructed wetland, now completed, has a capacity of 400 cubic meters per day, allowing a reduction of organic compound by 80%. The natural technology consume less power energy and could save up to 0.7 KWh/m^3 of energy or 56 CO2e of GHG emissions which is significantly lower than other types of conventional wastewater treatment systems. In 2019, WHA successfully delivered this facility to the Pluak Daeng Sub-district Administrative Organization in Rayong Province, Thailand. This pilot project will be an initial step to the implementation of other water conservation projects nationwide.

Performance Summary

Economic Performance

GRI Standard	Performance	Unit	2016	2017	2018	2019
	Direct economic value generated					
	Revenue	Million Baht	19,325	12,410	10,054	13,386
	Economic value distributed					
	Annual dividend payment	Million Baht	NA	2,899	1,299	2,398
201-1	Operating cost	Million Baht	824	840	493	466
	Employee expenses	Million Baht	448	545	884	940
	Tax	Million Baht	326	266	371	301
	Social investment	Million Baht	24	25	30	26
	Economic value retained	Million Baht	17,703	7,835	6,977	9,256
205-2	Communication and training on anti-corruption policy to governance body members					
	WHA Industrial Development	%	80	90	100	100
	WHA Utilities and Power	%	80	90	100	100
	WHA Logistics	%	100	100	100	100
	WHA Digital Platform	%	80	90	100	100
	Communication and training on anti-corruption policy to employees					
	WHA Industrial Development	%	80	90	100	100
	WHA Utilities and Power	%	80	90	100	100
	WHA Logistics	%	100	100	100	100
	WHA Digital Platform	%	80	90	100	100
205-3	Confirmed incidents of corruption					
	Total number of confirmed incidents of corruption	Case	0	0	0	1
	Number of employees who were dismissed due to corruption	Person	0	0	0	1
	Total number of confirmed incidents when contracts with business partners were terminated or not renewed due to violations related to corruption	Case	0	0	0	0
	Public legal cases regarding corruption	Case	0	0	0	1
418-1	Customer privacy					
	Total number of substantiated complaints received concerning breaches of customer privacy from outside parties and substantiated by the organization	Case	0	0	0	0
	Total number of substantiated complaints received concerning breaches of customer privacy from regulatory bodies	Case	0	0	0	0
	Total number of identified leaks, thefts, or losses of customer data	Case	0	0	0	0

Social Performance

Employment

GRI Standard	Performance	Unit	2016		2017		2018		2019	
			Male	Female	Male	Female	Male	Female	Male	Female
102-8	Total number of employees	Persons	467		512		552		571	
	Number of employees by business units									
	WHA Industrial Development	Persons	186	92	197	99	193	103	199	108
	WHA Utilities and Power	Persons	64	8	68	14	83	18	92	18
	WHA Logistics	Persons	48	58	56	63	54	66	58	68
	WHA Digital Platform	Persons	8	3	12	3	29	6	23	5
	Employee by gender									
	Total number of employees by gender	Persons	306	161	333	179	359	193	372	199
	Permanent employees by business units									
	WHA Industrial Development	Persons	186	92	197	99	193	103	199	108
	WHA Utilities and Power	Persons	64	8	68	14	83	18	92	18
	WHA Logistics	Persons	48	58	56	63	54	66	58	68
	WHA Digital Platform	Persons	8	3	12	3	29	6	23	5
	Total permanent employees	Persons	306	161	333	179	359	193	372	199
		Persons	467		511		537		557	
	Temporary employees by business units									
	WHA Industrial Development	Persons	0	0	0	0	0	0	0	0
	WHA Utilities and Power	Persons	0	0	0	0	0	0	0	0
	WHA Logistics	Persons	0	0	0	0	0	0	0	0
	WHA Digital Platform	Persons	0	0	0	0	0	0	0	0
	Total temporary employees	Persons	0	0	0	0	0	0	0	0
		Persons	0		0		0		0	
401-1	New Employee									
	Total new employee	Persons	55	29	44	34	37	27	46	24
		Persons	84		78		64		70	
	New hire rate	%	17.99		15.26		11.92		12.57	

GRI Standard	Performance	Unit	2016		2017		2018		2019	
			Male	Female	Male	Female	Male	Female	Male	Female
	New employee by business units									
	WHA Industrial Development	Persons	22	12	22	15	5	14	16	14
		%	4.71	2.57	4.31	2.94	0.93	2.61	2.87	2.51
	WHA Utilities and Power	Persons	14	3	5	8	17	4	19	1
		%	7.53	1.61	2.54	4.06	8.81	3.88	9.55	0.93
	WHA Logistics	Persons	12	11	10	10	6	8	10	9
		%	25.00	22.92	17.86	17.86	11.32	12.12	17.54	13.24
	WHA Digital Platform	Persons	7	3	7	1	9	1	1	0
		%	87.50	100.00	58.33	33.33	50.00	33.33	7.69	0.00
	New employee by age									
	Below 30 years old	Persons	25	12	17	10	14	9	23	15
		%	5.35	2.57	3.33	1.96	2.61	1.68	4.13	2.69
	30-50 years old	Persons	27	17	27	23	22	18	23	19
		%	5.78	3.64	5.28	4.50	4.10	3.35	4.13	3.41
	Over 50 years old	Persons	3	0	0	1	1	0	0	0
		%	0.64	0.00	0.00	0.20	0.19	0.00	0.00	0.00
	Turnover rate									
	Total employee turnover	Persons	16	7	15	29	22	61	29	16
		Persons	23		44		83		45	
	Turnover rate	%	4.93		8.61		15.46		8.08	
	Employee turnover by business unit									
	WHA Industrial Development	Persons	11	0	7	6	7	9	8	10
		%	2.36	0.00	1.37	1.17	1.30	1.68	1.44	1.80
	WHA Utilities and Power	Persons	3	3	2	3	3	1	11	1
		%	0.64	0.64	0.39	0.59	0.56	0.19	1.97	0.18
	WHA Logistics	Persons	2	4	3	8	7	6	6	4
		%	0.43	2.15	0.59	1.57	1.30	1.12	1.08	0.72
	WHA Digital Platform	Persons	0	0	3	0	5	1	3	1
		%	0.00	0.00	0.59	0.00	0.93	0.19	0.54	0.18
	Employee turnover by age									
	Below 30 years old	Persons	1	3	4	7	4	0	8	6
		%	0.21	0.64	0.78	1.37	0.74	0.00	1.44	1.08
	30-50 years old	Persons	14	4	9	9	16	17	20	10
		%	3.00	0.86	1.76	1.76	2.98	3.17	3.59	1.80
	Over 50 years old	Persons	1	0	2	1	2	0	0	0
		%	0.21	0.00	0.39	0.20	0.37	0.00	0.00	0.00

GRI Standard	Performance	Unit	2016		2017		2018		2019	
			Male	Female	Male	Female	Male	Female	Male	Female
404-1	Employee training									
	Total number of training hours provided to employees	Hours	7,560.80	3,789.20	4,496.00	1,813.75	8,348.85	2,030.40	9,724.50	5,929.00
	Total number of training hours provided to employees by business units									
	WHA Industrial Development	Hours	5,092.50	2,256.50	2,190.75	774.00	5,576.75	959.50	5,230.00	2,686.00
	WHA Utilities and Power	Hours	1,910.00	230.00	1,419.50	253.50	1,474.10	121.90	1,346.50	408.00
	WHA Logistics	Hours	558.30	1,320.70	734.75	755.50	1,013.00	874.00	2,632.00	2,755.00
	WHA Digital Platform	Hours	-	-	151.00	30.75	285.00	75.00	516.00	80.00
	Average training hours by gender	Hours	24.71	23.65	13.50	10.19	24.06	10.69	26.94	30.25
	Average training hours by business units									
	WHA Industrial Development	Hours	27.38	24.53	11.12	7.82	28.90	9.32	26.28	24.87
	WHA Utilities and Power	Hours	29.84	28.75	20.88	18.11	17.76	6.77	14.64	22.67
	WHA Logistics	Hours	11.63	22.77	13.12	12.19	19.11	13.24	46.18	40.51
	WHA Digital Platform	Hours	-	-	12.58	10.25	15.83	25.00	39.69	40.00
404-3	Percentage of employee received performance review	%	100		100		100		100	
405-1	Diversity of Director to executives level by age									
	Below 30 years old	Persons	0		0		0		0	
	30-50 years old	Persons	23		21		20		17	
	Over 50 years old	Persons	11		12		14		13	

Community Engagement

GRI Standard	Performance	Unit	2016	2017	2018	2019
413-1	Industrial estates with community engagement					
	Total number of industrial estate	Operation unit	8	9	10	10
	Industrial estates involved with local community engagement	Operation unit	8	9	10	10
		%	100	100	100	100
	Industrial estates involved with social impact assessment	Operation unit	8	9	10	10
		%	100	100	100	100
	Industrial estates with environmental impact assessments and ongoing monitoring	Operation unit	8	9	10	10
		%	100	100	100	100
	Industrial estates involved with public disclosure of results of environmental and social impact assessments	Operation unit	8	9	10	10
		%	100	100	100	100
	Industrial estates involved with local community development programs based on local communities' needs	Operation unit	8	9	10	10
		%	100	100	100	100
	Industrial estates involved with broad based local community consultation committees and processes that include vulnerable groups	Operation unit	7	8	9	9
		%	87.50	88.89	90	90
	Industrial estates involved with works councils, occupational health and safety committees	Operation unit	8	9	10	10
		%	100	100	100	100
	Industrial estates involved with formal local community grievance processes	Operation unit	8	9	10	10
		%	100	100	100	100

Occupational Health and Safety

GRI Standard	Performance	Unit	2016	2017	2018	2019
403-9	Lost time injury frequency rate (LTIFR)					
	WHA Industrial Development	Case per 1,000,000 hours worked	2.18	0	0	0
	WHA Utilities and Power	Case per 1,000,000 hours worked	0	0	0	4.68
	WHA Logistics	Case per 1,000,000 hours worked	0	0	0	0
	WHA Digital Platform	Case per 1,000,000 hours worked	0	0	0	0
	Fatalities					
	Employee	Person	0	0	0	0
	Contractor	Person	0	0	0	0

Environmental Performance

Materials

GRI Standard	Performance	Unit	2016	2017	2018	2019
301-1	Total renewable materials used					
	Water	Cubic meter	31,038,308	33,542,602	15,989,684	21,180,880
301-2	Recycled input materials used					
	Percentage of recycled water used to manufacture the organization's primary products and services	%	2.86	2.78	4.99	3.89

Waste

GRI Standard	Performance	Unit	2016	2017	2018	2019
306-2	Waste by type and disposal method					
	Total waste	Tons	4,242.86	3,254.27	4,600.27	5,013.25
	Hazardous waste					
	Total hazardous waste	Tons	0.89	1.49	2.28	1.40
	Land-fill		0.76	1.29	1.64	1.00
	On-site storage	Tons	0.13	0.20	0.64	0.40
	Non-hazardous waste					
	Total non-hazardous waste	Tons	4,241.97	3,252.78	4,597.99	5,011.85
	Land-fill	Tons	0.76	1.29	1.64	1.00
	On-site storage		0.13	0.20	0.64	0.40

Energy

GRI Standard	Performance	Unit	2016	2017	2018	2019
302-1	Energy consumption from non-renewable sources					
	Diesel generator	KWh	41,604	31,639	44,164	32,967
	Grid electricity consumption	KWh	24,449,578	25,247,033	33,360,027	32,074,405
	Energy consumption from renewable source					
	Solar power	KWh	NA	NA	NA	623,105

GHG Emissions

GRI Standard	Performance	Unit	2016	2017	2018	2019
305-1	Scope 1 emissions by business unit					
	WHA Industrial Development	Metric tons CO_2e	283.49	581.49	573.58	555.66
	WHA Utilities and Power	Metric tons CO_2e	112.66	85.68	119.60	89.27
	WHA Logistics	Metric tons CO_2e	NA	NA	NA	NA
	WHA Digital Platform	Metric tons CO_2e	NA	NA	NA	NA
305-2	Scope 2 emissions by business unit					
	WHA Industrial Development	Metric tons CO_2e	1,999.46	2,368.64	2,376.38	2,295.75
	WHA Utilities and Power	Metric tons CO_2e	12,028.33	11,882.83	14,758.82	15,730.07
	WHA Logistics	Metric tons CO_2e	204.31	188.32	262.67	260.34
	WHA Digital Platform	Metric tons CO_2e	NA	256.51	2,021.00	384.35

Water

GRI Standard	Performance	Unit	2016	2017	2018	2019
303-3	Water withdrawal					
	Total water withdrawn from surface water sources	Ml	6,189.24	7,397.59	7,369.51	3,811.91
	Total water withdrawn from third party water supplier	Ml	55,344.97	58,865.15	57,574.43	63,531.73
303-4	Water discharge by destination					
	Water discharged to surface water	Ml	28,812.88	30,872.90	47,185.82	44,292.55
	Water discharge to seawater	Ml	1,683.02	1,847.24	1,768.44	1,870.21
	Water discharged by category					
	Freshwater (≤1,000 mg/L Total Dissolved Solids)	Ml	28,812.88	30,872.90	47,185.82	44,292.55
	Other water (>1,000 mg/L Total Dissolved Solids)	Ml	1,683.02	1,847.24	1,768.44	1,870.21

Effluent

GRI Standard	Performance	Unit	Standard	2016	2017	2018	2019
306-1	Water discharge by quality and location*						
	WHA CIE1						
	pH	5.5 - 9.0	-	7.50	7.40	7.30	7.20
	Temperature	≤40	°C	31.20	30.80	30.50	32.40
	Biochemical Oxygen Demand (BOD)	≤20	mg/L	8.00	12.00	13.00	11.00
	Chemical Oxygen Demand (COD)	≤120	mg/L	33.00	42.00	44.00	44.00
	Grease and Oil	≤5	mg/L	<3	<3	<3	<3
	Suspended Solid (SS)	≤50	mg/L	16.00	17.00	16.00	12.00
	Total Dissolved Solid (TDS)	≤3,000	mg/L	778.00	832.00	864.00	965.00
	Total Kjeldahl Nitrogen (TKN)	≤100	mg/L	5.80	7.70	4.60	5.20
	Mercury (Hg)	≤0.005	mg/L	<0.0001	0.0001	0.0002	0.0002
	Selenium (Se)	≤0.02	mg/L	Na	Na	Na	Na
	Cadmium (Cd)	≤0.03	mg/L	<0.0001	0.00	0.007	<0.0001
	Lead (Pb)	≤0.2	mg/L	0.003	0.003	0.003	0.001
	Arsenic (As)	≤0.25	mg/L	0.003	0.003	0.003	0.003
	Chromium (Cr)	≤0.25	mg/L	<0.01	<0.01	<0.01	<0.01
	Barium (Ba)	≤1.0	mg/L	Na	Na	Na	Na
	Nickel (Ni)	≤1.0	mg/L	0.09	0.07	0.05	0.10
	Copper (Cu)	≤2.0	mg/L	0.26	0.17	0.21	0.31
	Zinc (Zn)	≤5.0	mg/L	0.13	0.26	0.22	0.21
	Sulfide as H2S	≤1.0	mg/L	Na	Na	Na	Na
	Cyanide as HCN	≤0.2	mg/L	Na	Na	Na	Na
	Chloride as Cl2	<1.0	mg/L	Na	Na	Na	Na
	WHA CIE2						
	pH	5.5 - 9.0	-	NA	8.50	8.40	8.30
	Temperature	≤40	°C	NA	29.60	30.60	29.70
	Biochemical Oxygen Demand (BOD)	≤20	mg/L	NA	6.00	3.00	5.00
	Chemical Oxygen Demand (COD)	≤120	mg/L	NA	26.00	27.00	51.00
	Grease and Oil	≤5	mg/L	NA	<3	<3	<3
	Suspended Solid (SS)	≤50	mg/L	NA	13.00	11.00	12.00
	Total Dissolved Solid (TDS)	≤3,000	mg/L	NA	1,787.00	1,764.00	2,160.00
	Total Kjeldahl Nitrogen (TKN)	≤100	mg/L	NA	2.00	2.30	2.30

GRI Standard	Performance	Unit	Standard	2016	2017	2018	2019
	Mercury (Hg)	≤0.005	mg/L	NA	<0.0001	<0.0001	0.0003
	Selenium (Se)	≤0.02	mg/L	NA	Na	Na	Na
	Cadmium (Cd)	≤0.03	mg/L	NA	0.0004	<0.0001	<0.0001
	Lead (Pb)	≤0.2	mg/L	NA	0.001	<0.0002	<0.0002
	Arsenic (As)	≤0.25	mg/L	NA	0.010	0.009	0.010
	Chromium (Cr)	≤0.25	mg/L	NA	<0.01	<0.01	<0.01
	Barium (Ba)	≤1.0	mg/L	NA	Na	Na	Na
	Nickel (Ni)	≤1.0	mg/L	NA	0.01	0.02	0.02
	Copper (Cu)	≤2.0	mg/L	NA	0.002	0.003	0.00
	Zinc (Zn)	≤5.0	mg/L	NA	0.03	0.13	0.16
	Sulfide as H2S	≤1.0	mg/L	NA	Na	Na	Na
	Cyanide as HCN	≤0.2	mg/L	NA	Na	Na	Na
	Chloride as Cl2	<1.0	mg/L	NA	Na	Na	Na
	ESIE Phase 1						
	pH	5.5 - 9.0	-	8.00	8.27	8.04	7.69
	Temperature	≤40	°C	30.2	29.9	29.6	29.8
	Biochemical Oxygen Demand (BOD)	≤20	mg/L	6	5	6	3
	Chemical Oxygen Demand (COD)	≤120	mg/L	33	38	49	44
	Grease and Oil	≤5	mg/L	<3	<3	<3	<3
	Suspended Solid (SS)	≤50	mg/L	16	20	12	10
	Total Dissolved Solid (TDS)	≤3,000	mg/L	681	886	685	890
	Total Kjeldahl Nitrogen (TKN)	≤100	mg/L	4.6	2.3	2.2	2.7
	Mercury (Hg)	≤0.005	mg/L	0.0001	0.0002	0.0004	0.0003
	Selenium (Se)	≤0.02	mg/L	0.0002	0.0004	0.0004	0.0004
	Cadmium (Cd)	≤0.03	mg/L	0.001	0.0001	0.0001	0.0001
	Lead (Pb)	≤0.2	mg/L	0.0008	0.0004	0.0004	0.0003
	Arsenic (As)	≤0.25	mg/L	0.003	0.004	0.004	0.005
	Trivalent Chromium (Cr+3)	≤0.75	mg/L	<0.01	<0.01	<0.01	<0.01
	Hexavalent Chromium (Cr+6)	≤0.25	mg/L	<0.01	<0.01	<0.01	<0.01
	Barium (Ba)	≤1.0	mg/L	0.03	0.19	0.27	0.17
	Nickel (Ni)	≤1.0	mg/L	0.06	0.03	0.02	0.04
	Copper (Cu)	≤2.0	mg/L	0.003	0.004	0.006	0.008
	Zinc (Zn)	≤5.0	mg/L	0.17	0.18	0.17	0.11
	Sulfide as H2S	≤1.0	mg/L	<0.5	<0.5	<0.5	<0.5
	Cyanide as HCN	≤0.2	mg/L	<0.005	<0.005	<0.005	<0.005
	Chloride as Cl2	≤1.0	mg/L	Na	Na	Na	Na

GRI Standard	Performance	Unit	Standard	2016	2017	2018	2019
	ESIE Phase 2B						
	pH	5.5 - 9.0	-	8	7.7	7.8	7.6
	Temperature	≤40	°C	30.1	29.8	29.9	30.1
	Biochemical Oxygen Demand (BOD)	≤20	mg/L	10	7	7	5
	Chemical Oxygen Demand (COD)	≤120	mg/L	45	32	35	45
	Grease and Oil	≤5	mg/L	<3	<3	<3	<3
	Suspended Solid (SS)	≤50	mg/L	22	16	12	9
	Total Dissolved Solid (TDS)	≤3,000	mg/L	803	889	841	905
	Total Kjeldahl Nitrogen (TKN)	≤100	mg/L	6.7	2.4	2.3	2.5
	Mercury (Hg)	≤0.005	mg/L	0.0001	0.0001	0.0001	0.0001
	Selenium (Se)	≤0.02	mg/L	ND	ND	0.0001	0.0001
	Cadmium (Cd)	≤0.03	mg/L	ND	0.0001	0.0001	0.0001
	Lead (Pb)	≤0.2	mg/L	0.0006	0.0003	0.0002	0.0002
	Arsenic (As)	≤0.25	mg/L	0.002	0.002	0.002	0.002
	Trivalent Chromium (Cr+3)	≤0.75	mg/L	<0.01	<0.01	<0.01	<0.01
	Hexavalent Chromium (Cr+6)	≤0.25	mg/L	<0.01	<0.01	<0.01	<0.01
	Barium (Ba)	≤1.0	mg/L	0.04	0.03	0.03	0.03
	Nickel (Ni)	≤1.0	mg/L	0.011	0.012	0.009	0.009
	Copper (Cu)	≤2.0	mg/L	0.002	0.001	0.001	0.001
	Zinc (Zn)	≤5.0	mg/L	0.01	0.03	0.08	0.05
	Sulfide as H2S	≤1.0	mg/L	<0.05	<0.05	<0.05	<0.05
	Cyanide as HCN	≤0.2	mg/L	<0.005	<0.005	<0.005	<0.005
	Chloride as Cl2	≤1.0	mg/L	Na	Na	Na	Na
	WHA ESIE1 Phase1						
	pH	5.5 - 9.0	-	7.84	7.82	7.6	7.7
	Temperature	≤40	°C	29.74	30.04	29.85	30
	Biochemical Oxygen Demand (BOD)	≤20	mg/L	8.58	10	11	10.16
	Chemical Oxygen Demand (COD)	≤120	mg/L	34.58	30.33	40.75	50.26
	Grease and Oil	≤5	mg/L	3	4	3	3
	Suspended Solid (SS)	≤50	mg/L	14.58	16.58	10.9	17.16
	Total Dissolved Solid (TDS)	≤3,000	mg/L	656	619	572	626
	Total Kjeldahl Nitrogen (TKN)	≤100	mg/L	5.7	9.1	6.8	7.8
	Mercury (Hg)	≤0.005	mg/L	0.00046	0.0001	0.00065	0.0001

GRI Standard	Performance	Unit	Standard	2016	2017	2018	2019
	Selenium (Se)	≤0.02	mg/L	0.008	0.0005	0.00075	0.0003
	Cadmium (Cd)	≤0.03	mg/L	0.00010	0.0001	0.0001	0.0001
	Lead (Pb)	≤0.2	mg/L	0.00037	0.00047	0.0046	0.0003
	Arsenic (As)	≤0.25	mg/L	0.0175	0.0083	0.0083	0.0055
	Chromium (Cr)	≤0.25	mg/L	0.01	0.01	0.01	0.01
	Barium (Ba)	≤1.0	mg/L	0.03	0.024	0.065	0.035
	Nickel (Ni)	≤1.0	mg/L	0.056	0.05	0.074	0.07
	Copper (Cu)	≤2.0	mg/L	0.00015	0.0012	0.0011	0.0007
	Zinc (Zn)	≤5.0	mg/L	0.045	0.03	0.04	0.04
	Sulfide as H2S	≤1.0	mg/L	0.8	0.50	0.5	0.5
	Cyanide as HCN	≤0.2	mg/L	<0.005	0.005	0.005	0.005
	Chloride as Cl2	≤1.0	mg/L	Na	Na	Na	Na
	WHA ESIE1 Phase3						
	pH	5.5 - 9.0	-	7.9	7.8	7.7	7.5
	Temperature	≤40	°C	28.90	29.55	29.4	29.36
	Biochemical Oxygen Demand (BOD)	≤20	mg/L	7.25	7.4	8.4	8.1
	Chemical Oxygen Demand (COD)	≤120	mg/L	40.33	36.08	39.25	49.17
	Grease and Oil	≤5	mg/L	3	5	3	3.00
	Suspended Solid (SS)	≤50	mg/L	19.60	14.27	10.83	8.70
	Total Dissolved Solid (TDS)	≤3,000	mg/L	272	303	282	319
	Total Kjeldahl Nitrogen (TKN)	≤100	mg/L	5.30	4.25	5.12	9.70
	Mercury (Hg)	≤0.005	mg/L	0.0011	0.0001	0.0004	0.0001
	Selenium (Se)	≤0.02	mg/L	0.0001	0.0002	0.0001	0.0003
	Cadmium (Cd)	≤0.03	mg/L	0.0001	0.0001	0.0001	0.0001
	Lead (Pb)	≤0.2	mg/L	0.0007	0.0005	0.0002	0.0002
	Arsenic (As)	≤0.25	mg/L	0.015	0.009	0.0053	0.0059
	Chromium (Cr)	≤0.25	mg/L	0.01	0.01	0.01	0.01
	Barium (Ba)	≤1.0	mg/L	0.04	0.045	0.046	0.06
	Nickel (Ni)	≤1.0	mg/L	0.003	0.0025	0.001	0.002
	Copper (Cu)	≤2.0	mg/L	0.0015	0.00006	0.0005	0.0007
	Zinc (Zn)	≤5.0	mg/L	0.028	0.011	0.019	0.02
	Sulfide as H2S	≤1.0	mg/L	0.75	0.50	0.50	0.7
	Cyanide as HCN	≤0.2	mg/L	0.005	0.005	0.005	0.005
	Chloride as Cl2	≤1.0	mg/L	Na	Na	Na	Na
	WHA ESIE2						
	pH	5.5 - 9.0	-	NA	8.69	7.70	8.75
	Temperature	≤40	°C	NA	27.4	29	31

GRI Standard	Performance	Unit	Standard	2016	2017	2018	2019
	Biochemical Oxygen Demand (BOD)	≤20	mg/L	NA	11	8	5
	Chemical Oxygen Demand (COD)	≤120	mg/L	NA	64	31	52
	Grease and Oil	≤5	mg/L	NA	<3	< 3	< 3
	Suspended Solid (SS)	≤50	mg/L	NA	56	15	17
	Total Dissolved Solid (TDS)	≤3,000	mg/L	NA	261	470	668
	Total Kjeldahl Nitrogen (TKN)	≤100	mg/L	NA	3.1	1.9	3.0
	Mercury (Hg)	≤0.005	mg/L	NA	< 0.0001	< 0.0001	0.002
	Selenium (Se)	≤0.02	mg/L	NA	Na	Na	Na
	Cadmium (Cd)	≤0.03	mg/L	NA	Not Detected	Not Detected	Not Detected
	Lead (Pb)	≤0.2	mg/L	NA	0.0006	0.0004	0.0002
	Arsenic (As)	≤0.25	mg/L	NA	0.004	0.003	0.004
	Chromium (Cr)	≤0.25	mg/L	NA	< 0.01	< 0.01	< 0.01
	Barium (Ba)	≤1.0	mg/L	NA			
	Nickel (Ni)	≤1.0	mg/L	NA	0.002	0.008	0.02
	Copper (Cu)	≤2.0	mg/L	NA	0.002	0.001	0.001
	Zinc (Zn)	≤5.0	mg/L	NA	0.04	0.02	0.02
	Sulfide as H2S	≤1.0	mg/L	NA	Na	Na	Na
	Cyanide as HCN	≤0.2	mg/L	NA	Na	Na	Na
	Chloride as Cl2	≤1.0	mg/L	NA	Na	Na	Na
	WHA ESIE4						
	pH	5.5 - 9.0	-	NA	NA	NA	7.4-8.9
	Temperature	≤40	°C	NA	NA	NA	26.8-32.3
	Biochemical Oxygen Demand (BOD)	≤20	mg/L	NA	NA	NA	4-13
	Chemical Oxygen Demand (COD)	≤120	mg/L	NA	NA	NA	19-64
	Grease and Oil	≤5	mg/L	NA	NA	NA	<3
	Suspended Solid (SS)	≤50	mg/L	NA	NA	NA	6-50
	Total Dissolved Solid (TDS)	≤3,000	mg/L	NA	NA	NA	152-260
	Total Kjeldahl Nitrogen (TKN)	≤100	mg/L	NA	NA	NA	1.4-5.7
	Mercury (Hg)	≤0.005	mg/L	NA	NA	NA	ND, <0.0001
	Selenium (Se)	≤0.02	mg/L	NA	NA	NA	ND, <0.0001
	Cadmium (Cd)	≤0.03	mg/L	NA	NA	NA	ND, <0.0001
	Lead (Pb)	≤0.2	mg/L	NA	NA	NA	<0.0002
	Arsenic (As)	≤0.25	mg/L	NA	NA	NA	0.0008-0.002
	Trivalent Chromium (Cr+3)	≤0.75	mg/L	NA	NA	NA	<0.01

GRI Standard	Performance	Unit	Standard	2016	2017	2018	2019
	Hexavalent Chromium (Cr+6)	≤0.25	mg/L	NA	NA	NA	ND, <0.01
	Barium (Ba)	≤1.0	mg/L	NA	NA	NA	0.02-0.04
	Nickel (Ni)	≤1.0	mg/L	NA	NA	NA	0.0006-0.001
	Copper (Cu)	≤2.0	mg/L	NA	NA	NA	0.001-0.006
	Zinc (Zn)	≤5.0	mg/L	NA	NA	NA	0.01-0.13
	Sulfide as H2S	≤1.0	mg/L	NA	NA	NA	<0.5
	Cyanide as HCN	≤0.2	mg/L	NA	NA	NA	<0.005
	Chloride as Cl2	≤1.0	mg/L	NA	NA	NA	Na
	WHA EIE						
	pH	5.5 - 9.0	-	8	8	8	8
	Temperature	≤40	°C	35	34	33	34
	Biochemical Oxygen Demand (BOD)	≤20	mg/L	4	3	6	2
	Chemical Oxygen Demand (COD)	≤120	mg/L	38	33	45	49
	Grease and Oil	≤5	mg/L	3	3	3	3
	Suspended Solid (SS)	≤50	mg/L	21	17	26	22
	Total Dissolved Solid (TDS)	≤3,000	mg/L	1,766	1,833	2,065	2,405
	Total Kjeldahl Nitrogen (TKN)	≤100	mg/L	2	3	3	3
	Mercury (Hg)	≤0.005	mg/L	0	0	0	0
	Selenium (Se)	≤0.02	mg/L	0	0	0	0
	Cadmium (Cd)	≤0.03	mg/L	0	0	0	0
	Lead (Pb)	≤0.2	mg/L	0	0	0	0
	Arsenic (As)	≤0.25	mg/L	0	0	0	0
	Chromium (Cr)	≤0.25	mg/L	Na	Na	Na	Na
	Barium (Ba)	≤1.0	mg/L	0	0	0	0
	Nickel (Ni)	≤1.0	mg/L	0	0	0	0
	Copper (Cu)	≤2.0	mg/L	0	0	0	0
	Zinc (Zn)	≤5.0	mg/L	0	0	0	0
	Sulfide as H2S	≤1.0	mg/L	1	1	1	1
	Cyanide as HCN	≤0.2	mg/L	0	0	0	0
	Chloride as Cl2	≤1.0	mg/L	Na	Na	Na	Na
	WHA RIL						
	pH	5.5 - 9.0	-	7	8	7	7
	Temperature	≤40	°C	31	32	30	31
	Biochemical Oxygen Demand (BOD)	≤20	mg/L	6	9	12	8
	Chemical Oxygen Demand (COD)	≤120	mg/L	33	33	36	49

GRI Standard	Performance	Unit	Standard	2016	2017	2018	2019
	Grease and Oil	≤5	mg/L	3	3	3	3
	Suspended Solid (SS)	≤50	mg/L	16	9	11	10
	Total Dissolved Solid (TDS)	≤3,000	mg/L	1,638	1,466	1,193	1,083
	Total Kjeldahl Nitrogen (TKN)	≤100	mg/L	9	11	10	11
	Mercury (Hg)	≤0.005	mg/L	0	0	0	ND
	Selenium (Se)	≤0.02	mg/L	Na	Na	Na	Na
	Cadmium (Cd)	≤0.03	mg/L	Na	Na	Na	Na
	Lead (Pb)	≤0.2	mg/L	Na	Na	Na	Na
	Arsenic (As)	≤0.25	mg/L	Na	Na	Na	Na
	Chromium (Cr)	≤0.25	mg/L	Na	Na	Na	Na
	Barium (Ba)	≤1.0	mg/L	Na	Na	Na	Na
	Nickel (Ni)	≤1.0	mg/L	0	0	0	0
	Copper (Cu)	≤2.0	mg/L	Na	Na	Na	Na
	Zinc (Zn)	≤5.0	mg/L	1	0	0	0
	Sulfide as H2S	≤1.0	mg/L	1	1	1	1
	Cyanide as HCN	≤0.2	mg/L	Na	Na	Na	Na
	Chloride as Cl2	≤1.0	mg/L	Na	Na	Na	Na
	WHA SIL						
	pH	5.5 - 9.0	-	8	8	8	8
	Temperature	≤40	°C	32	31	30	31
	Biochemical Oxygen Demand (BOD)	≤20	mg/L	3	6	4	3
	Chemical Oxygen Demand (COD)	≤120	mg/L	42	54	45	41
	Grease and Oil	≤5	mg/L	3	4	4	3
	Suspended Solid (SS)	≤50	mg/L	13	19	13	11
	Total Dissolved Solid (TDS)	≤3,000	mg/L	1,168	1,128	1,084	1,073
	Total Kjeldahl Nitrogen (TKN)	≤100	mg/L	2	2	3	3
	Mercury (Hg)	≤0.005	mg/L	ND	ND	ND	ND
	Selenium (Se)	≤0.02	mg/L	Na	Na	Na	Na
	Cadmium (Cd)	≤0.03	mg/L	<0.0001	<0.0001	ND	<0.0001
	Lead (Pb)	≤0.2	mg/L	0	0	0	0
	Arsenic (As)	≤0.25	mg/L	Na	Na	Na	Na
	Chromium (Cr)	≤0.25	mg/L	Na	Na	Na	Na
	Barium (Ba)	≤1.0	mg/L	Na	Na	Na	Na
	Nickel (Ni)	≤1.0	mg/L	0	0	0	0
	Copper (Cu)	≤2.0	mg/L	0	0	0	0
	Zinc (Zn)	≤5.0	mg/L	0	0	0	0

* Remark : Not detected = ND Not analyzed = Na Not applicable= NA

GRI Standard	Performance	Unit	Standard	2016	2017	2018	2019
	Sulfide as H2S	≤1.0	mg/L	<0.5	<0.5	<0.5	<0.5
	Cyanide as HCN	≤0.2	mg/L	Na	Na	Na	Na
	Chloride as Cl2	≤1.0	mg/L	Na	Na	Na	Na

Air Emissions

GRI Standard	Performance	Unit	Standard	2016	2017	2018	2019
305-7	Ambient air quality monitoring by industrial estate operation*						
	WHA ESIE						
	Location 1: Chompon Chao Phraya Temple						
	NOx	ppm	≤ 0.17	0.006-0.012	0.004-0.009	0.002-0.008	0.007-0.016
	SOx	mg/m^3	≤ 0.3	0.0138-0.0141	0.0035-0.0044	0.0123-0.0138	0.0100-0.0120
	Total Suspended Particulate (TSP)	mg/m^3	≤ 0.33	0.040-0.088	0.026-0.061	0.024-0.069	0.028-0.053
	Particulate matter10 (PM10)	mg/m^3	<0.12	-	-	-	-
	Location 2: Klong Gram Temple						
	NOx	ppm	≤ 0.17	0.008-0.012	0.007-0.016	0.009-0.025	0.007-0.019
	SOx	mg/m^3	≤ 0.3	0.0061-0.0102	0.0029-0.0039	0.0258-0.0269	0.0097-0.0106
	Total Suspended Particulate (TSP)	mg/m^3	≤ 0.33	0.037-0.091	0.029-0.113	0.025-0.102	0.026-0.074
	Particulate matter10 (PM10)	mg/m^3	<0.12	-	-	-	-
	Location 3: Ras Asadaram Temple						
	NOx	ppm	≤ 0.17	0.010-0.022	0.006-0.010	0.002-0.003	0.007-0.019
	SOx	mg/m^3	≤ 0.3	0.0032-0.0036	0.0035-0.0043	0.0094-0.0357	0.0035-0.0040
	Total Suspended Particulate (TSP)	mg/m^3	≤ 0.33	0.045-0.110	0.039-0.083	0.039-0.074	0.026-0.123
	Particulate matter10 (PM10)	mg/m^3	<0.12	-	-	-	-
	Location 4: Ban Wang Ta Pin						
	NOx	ppm	≤ 0.17	0.010-0.013	0.006-0.011	0.004-0.048	0.007-0.019
	SOx	mg/m^3	≤ 0.3	0.0051-0.0067	0.0043-0.0059	0.0093-0.0097	0.0047-0.0053
	Total Suspended Particulate (TSP)	mg/m^3	≤ 0.33	0.038-0.086	0.049-0.119	0.038-0.118	0.040-0.129
	Particulate matter10 (PM10)	mg/m^3	<0.12	-	-	-	-
	Location 5: Ban Map Iang School						
	NOx	ppm	≤ 0.17	0.009-0.023	0.010-0.023	0.006-0.011	0.007-0.019
	SOx	mg/m^3	≤ 0.3	0.0005-0.0085	0.0033-0.0043	0.0039-0.0042	0.0092-0.0103

GRI Standard	Performance	Unit	Standard	2016	2017	2018	2019
	Total Suspended Particulate (TSP)	mg/m^3	≤ 0.33	0.038-0.092	0.026-0.072	0.030-0.095	0.015-0.051
	Particulate matter10 (PM10)	mg/m^3	<0.12	-	-	-	-
	Location 6: Sri Sattanaram Monk Center						
	NOx	ppm	≤ 0.17	0.009-0.025	0.008-0.016	0.003-0.015	0.003-0.016
	SOx	mg/m^3	≤0.3	0.0013-0.0032	0.0029-0.0040	0.0039-0.0042	0.0050-0.0354
	Total Suspended Particulate (TSP)	mg/m^3	≤ 0.33	0.018-0.040	0.017-0.035	0.015-0.031	0.018-0.030
	Particulate matter10 (PM10)	mg/m^3	<0.12	-	-	-	-
	WHA ESIE1						
	Location 1: Eastern Sugar Company Community School						
	NOx	ppm	≤ 0.17	0.006-0.014	0.007-0.018	0.015-0.028	0.004-0.016
	SOx	mg/m^3	≤ 0.3	0.0061-0.0074	0.0067-0.0087	0.012-0.016	0.0035-0.004
	Total Suspended Particulate (TSP)	mg/m^3	≤ 0.33	0.014-0.107	0.053-0.097	0.059-0.107	0.023-0.049
	Particulate matter10 (PM10)	mg/m^3	<0.12	0.009-0.107	0.019-0.040	0.054-0.086	0.014-0.021
	Location 2: Surasak School						
	NOx	ppm	≤ 0.17	0.005-0.016	0.011-0.021	0.067-0.086	0.008-0.014
	SOx	mg/m^3	≤ 0.3	0.006-0.007	0.0061-0.0065	0.024-0.026	0.0003-0.004
	Total Suspended Particulate (TSP)	mg/m^3	≤ 0.33	0.054-0.146	0.066-0.1640	0.090-0.149	0.038-0.068
	Particulate matter10 (PM10)	mg/m^3	<0.12	0.029-0.065	0.013-0.066	0.042-0.097	0.018-0.028
	Location 3: Weather Station						
	NOx	ppm	≤ 0.17	0.003-0.005	0.004-0.009	0.015-0.028	0.031-0.038
	SOx	mg/m^3	≤ 0.3	0.005-0.011	0.004-0.010	0.012-0.016	0.002-0.012
	Total Suspended Particulate (TSP)	mg/m^3	≤ 0.33	0.028-0.053	0.031-0.058	0.059-0.107	0.021-0.030
	Particulate matter10 (PM10)	mg/m^3	<0.12	0.010-0.039	0.031-0.054	0.054-0.086	0.013-0.018
	Location 4: Klong Gram Temple						
	NOx	ppm	≤ 0.17	0.007-0.012	0.014-0.022	0.010-0.026	0.011-0.019
	SOx	mg/m^3	≤ 0.3	0.0003-0.0053	0.003-0.005	0.004-0.005	0.004-0.006
	Total Suspended Particulate (TSP)	mg/m^3	≤ 0.33	0.039-0.064	0.046-0.112	0.044-0.209	0.018-0.062
	Particulate matter10 (PM10)	mg/m^3	<0.12	0.015-0.039	0.017-0.040	0.030-0.120	0.017-0.029
	Location 5: Ban Tai Sun						
	NOx	ppm	≤ 0.17	0.007-0.010	0.009-0.023	0.008-0.035	0.008-0.012

GRI Standard	Performance	Unit	Standard	2016	2017	2018	2019
	SOx	mg/m^3	≤ 0.3	0.0017-0.0024	0.006-0.010	0.010-0.012	0.002-0.003
	Total Suspended Particulate (TSP)	mg/m^3	≤ 0.33	0.034-0.063	0.035-0.071	0.034-0.041	0.019-0.039
	Particulate matter10 (PM10)	mg/m^3	<0.12	0.021-0.040	0.013-0.030	0.027-0.036	0.014-0.020
	Location 6: Khao Kan Song Temple						
	NOx	ppm	≤ 0.17	0.002-0.006	0.007-0.013	0.019-0.043	0.005-0.013
	SOx	mg/m^3	≤ 0.3	0.0036-0.0049	0.006-0.0077	0.037-0.052	0.004-0.0097
	Total Suspended Particulate (TSP)	mg/m^3	≤ 0.33	0.038-0.120	0.048-0.092	0.074-0.088	0.034-0.082
	Particulate matter10 (PM10)	mg/m^3	<0.12	0.025-0.090	0.036-0.059	0.029-0.050	0.019-0.050
	Location 7: Ta Kien ku Temple						
	NOx	ppm	≤ 0.17	0.002-0.008	0.006-0.015	0.007-0.024	0.004-0.010
	SOx	mg/m^3	≤ 0.3	0.0035-0.0041	0.004-0.012	0.017-0.023	0.001-0.003
	Total Suspended Particulate (TSP)	mg/m^3	≤ 0.33	0.040-0.063	0.047-0.063	0.044-0.069	0.019-0.037
	Particulate matter10 (PM10)	mg/m^3	<0.12	0.025-0.049	0.028-0.049	0.029-0.053	0.016-0.029
	Location 8: Ban Som						
	NOx	ppm	≤ 0.17	0.004-0.012	0.005-0.010	0.006-0.016	0.003-0.010
	SOx	mg/m^3	≤ 0.3	0.0005-0.0012	0.0042-0.0044	0.0053-0.007	0.0019-0.0042
	Total Suspended Particulate (TSP)	mg/m^3	≤ 0.33	0.047-0.081	0.064-0.090	0.041-0.120	0.023-0.035
	Particulate matter10 (PM10)	mg/m^3	<0.12	0.029-0.047	0.028-0.044	0.020-0.048	0.015-0.025
	WHA ESIE2						
	Location 1: Ban Map Lam Bid School						
	NOx	ppm	≤ 0.17	-	0.008-0.016	0.003-0.010	0.016-0.039
	SOx	mg/m^3	≤ 0.3	-	0.007-0.013	0.0031-0.0045	0.0084-0.0089
	Total Suspended Particulate (TSP)	mg/m^3	≤ 0.33	0.03-0.143	0.038-0.074	0.031-0.098	0.046-0.115
	Particulate matter10 (PM10)	mg/m^3	<0.12	0.012-0.036	0.019-0.050	0.019-0.058	0.034-0.053
	Location 2: Industrial estate area						
	NOx	ppm	≤ 0.17	-	0.007-0.021	0.003-0.012	0.010-0.018
	SOx	mg/m^3	≤ 0.3	-	0.005-0.006	0.01	0.0060-0.0079
	Total Suspended Particulate (TSP)	mg/m^3	≤ 0.33	0.043-0.109	0.046-0.081	0.025-0.128	0.049-0.071
	Particulate matter10 (PM10)	mg/m^3	<0.12	0.015-0.027	0.029-0.065	0.012-0.043	0.016-0.030

GRI Standard	Performance	Unit	Standard	2016	2017	2018	2019
	Location 3: Ban Map Lam Bid Moo.7						
	NOx	ppm	≤ 0.17	-	0.006-0.012	0.003-0.012	0.004-0.012
	SOx	mg/m^3	≤ 0.3	-	0.003-0.012	0.0010-0.0204	0.0037-0.0047
	Total Suspended Particulate (TSP)	mg/m^3	≤ 0.33	0.024-0.062	0.037-0.075	0.032-0.074	0.038-0.062
	Particulate matter10 (PM10)	mg/m^3	<0.12	0.012-0.034	0.020-0.044	0.018-0.047	0.024-0.031
	Location 4: Khao Kan Song Moo.3						
	NOx	ppm	≤ 0.17	-	0.001-0.002	0.002-0.004	0.010-0.028
	SOx	mg/m^3	≤ 0.3	-	0.010-0.025	0.0309-0.0398	0.0042-0.0060
	Total Suspended Particulate (TSP)	mg/m^3	≤ 0.33	0.062-0.136	0.024-0.073	0.025-0.072	0.050-0.087
	Particulate matter10 (PM10)	mg/m^3	<0.12	0.023-0.043	0.021-0.051	0.023-0.047	0.022-0.036
	Location 5: Chong Lom Temple						
	NOx	ppm	≤ 0.17	-	0.006-0.012	0.022-0.004	0.002-0.008
	SOx	mg/m^3	≤ 0.3	-	0.002-0.010	0.001-0.002	0.0029-0.0037
	Total Suspended Particulate (TSP)	mg/m^3	≤ 0.33	0.028-0.076	0.023-0.055	0.022-0.066	0.039-0.080
	Particulate matter10 (PM10)	mg/m^3	<0.12	0.01-0.016	0.016-0.042	0.010-0.038	0.016-0.026
	Location 6: Ban Map Kla Moo.4						
	NOx	ppm	≤ 0.17	-	0.005-0.016	0.013-0.028	0.007-0.014
	SOx	mg/m^3	≤ 0.3	-	0.003-0.008	0.0283-0.0526	0.0031-0.0092
	Total Suspended Particulate (TSP)	mg/m^3	≤ 0.33	0.048-0.112	0.064-0.108	0.041-0.173	0.079-0.175
	Particulate matter10 (PM10)	mg/m^3	<0.12	0.032-0.066	0.031-0.055	0.024-0.076	0.034-0.076
	WHA ESIE3						
	Location 1: Ban Ta Jam School						
	NOx	ppm	≤ 0.17	-	-	-	-
	SOx	mg/m^3	≤ 0.3	-	-	-	-
	Total Suspended Particulate (TSP)	mg/m^3	≤ 0.33	-	-	0.031-0.163	0.080-0.218
	Particulate matter10 (PM10)	mg/m^3	<0.12	-	-	0.025-0.070	0.034-0.053
	Location 2: Ta Jam Sub-District Hospital						
	NOx	ppm	≤ 0.17	-	-	-	-
	SOx	mg/m^3	≤ 0.3	-	-	-	-
	Total Suspended Particulate (TSP)	mg/m^3	≤ 0.33	-	-	0.035-0.063	0.065-0.087

GRI Standard	Performance	Unit	Standard	2016	2017	2018	2019
	Particulate matter10 (PM10)	mg/m^3	<0.12	-	-	0.031-0.046	0.028-0.051
	Location 3: Huay Mara Sub-District Hospital						
	NOx	ppm	≤ 0.17	-	-	-	-
	SOx	mg/m^3	≤ 0.3	-	-	-	-
	Total Suspended Particulate (TSP)	mg/m^3	≤ 0.33	-	-	0.031-0.061	0.031-0.055
	Particulate matter10 (PM10)	mg/m^3	<0.12	-	-	0.029-0.046	0.023-0.037
	Location 4: Ban Meun Jit Sub-District Hospital						
	NOx	ppm	≤ 0.17	-	-	-	-
	SOx	mg/m^3	≤ 0.3	-	-	-	-
	Total Suspended Particulate (TSP)	mg/m^3	≤ 0.33	-	-	0.032-0.109	0.033-0.076
	Particulate matter10 (PM10)	mg/m^3	<0.12	-	-	0.029-0.076	0.025-0.032
	Location 5: Raweng School						
	NOx	ppm	≤ 0.17	-	-	-	-
	SOx	mg/m^3	≤ 0.3	-	-	-	-
	Total Suspended Particulate (TSP)	mg/m^3	≤ 0.33	-	-	0.023-0.077	0.050-0.076
	Particulate matter10 (PM10)	mg/m^3	<0.12	-	-	0.018-0.043	0.027-0.040
	Location 6: Chaloemraj Temple						
	NOx	ppm	≤ 0.17	-	-	-	-
	SOx	mg/m^3	≤ 0.3	-	-	-	-
	Total Suspended Particulate (TSP)	mg/m^3	≤ 0.33	-	-	0.029-0.063	0.027-0.101
	Particulate matter10 (PM10)	mg/m^3	<0.12	-	-	0.021-0.041	0.020-0.033
	WHA ESIE4						
	Location 1: Ban Nikom Sans Ton Eng-main road						
	NOx	ppm	≤ 0.17	-	-	0.006-0.014	0.004-0.030
	SOx	mg/m^3	≤ 0.3	-	-	0.0051-0.0054	0.0083-0.0089
	Total Suspended Particulate (TSP)	mg/m^3	≤ 0.33	-	0.023-0.049	0.037-0.075	0.079-0.123
	Particulate matter10 (PM10)	mg/m^3	<0.12	-	0.021-0.036	0.020-0.038	0.038-0.066
	Location 2: Ban Nong Mapring						
	NOx	ppm	≤ 0.17	-	-	0.0030-0.0080	0.004-0.021
	SOx	mg/m^3	≤ 0.3	-	-	0.0013-0.0017	0.0056-0.0060
	Total Suspended Particulate (TSP)	mg/m^3	≤ 0.33	-	0.024-0.059	0.034-0.070	0.064-0.096

GRI Standard	Performance	Unit	Standard	2016	2017	2018	2019
	Particulate matter10 (PM10)	mg/m^3	<0.12	-	0.014-0.036	0.021-0.044	0.025-0.039
	Location 3: Mae Nam Ku Temple						
	NOx	ppm	⩽ 0.17	-	-	0.0020-0.0100	0.004-0.022
	SOx	mg/m^3	⩽ 0.3	-	-	0.0014-0.0031	0.0005-0.0013
	Total Suspended Particulate (TSP)	mg/m^3	⩽ 0.33	-	0.021-0.061	0.054-0.088	0.073-0.117
	Particulate matter10 (PM10)	mg/m^3	<0.12	-	0.016-0.030	0.024-0.041	0.011-0.043
	Location 4: Ban Mae Nam Ku						
	NOx	ppm	⩽ 0.17	-	-	0.0120-0.0230	0.013-0.024
	SOx	mg/m^3	⩽ 0.3	-	-	0.0101-0.0104	0.0100-0.0114
	Total Suspended Particulate (TSP)	mg/m^3	⩽ 0.33	-	0.032-0.082	0.042-0.072	0.074-0.115
	Particulate matter10 (PM10)	mg/m^3	<0.12	-	0.018-0.039	0.027-0.049	0.034-0.061
	WHA CIE1						
	Location 1: Resident and commercial area within the industrial estate						
	NOx	ppm	≤ 0.17	0.002-0.038	0.002-0.071	0.009-0.062	0.010-0.034
	SOx	mg/m^3	≤ 0.3	0.0057-0.0063	0.0033-0.0045	0.0076-0.0079	0.0029-0.0183
	Total Suspended Particulate (TSP)	mg/m^3	≤ 0.33	0.066-0.089	0.107-0.123	0.086-0.102	0.110-0.146
	Particulate matter10 (PM10)	mg/m^3	<0.12	-	-	-	-
	Location 2: Bo Win School						
	NOx	ppm	≤ 0.17	<0.001-0.004	0.002-0.011	<0.001-0.017	<0.001-0.010
	SOx	mg/m^3	≤ 0.3	0.0007-0.0008	0.0046-0.0065	0.0048-0.0058	0.0017-0.0027
	Total Suspended Particulate (TSP)	mg/m^3	≤ 0.33	0.036-0.047	0.083-0.091	0.043-0.084	0.028-0.031
	Particulate matter10 (PM10)	mg/m^3	<0.12	-	-	-	-
	Location 3: Pan Saded Nok Temple						
	NOx	ppm	≤ 0.17	0.001-0.017	0.003-0.028	<0.001-0.013	0.033-0.010
	SOx	mg/m^3	≤ 0.3	0.0033-0.0036	0.0034-0.0046	0.0046-0.0089	0.0079-0.0088
	Total Suspended Particulate (TSP)	mg/m^3	≤ 0.33	0.032-0.070	0.058-0.073	0.026-0.043	0.016-0.031
	Particulate matter10 (PM10)	mg/m^3	<0.12	-	-	-	-

GRI Standard	Performance	Unit	Standard	2016	2017	2018	2019
	WHA CIE2						
	Location 1: Hoobbon Sub-District Hospital						
	NOx	ppm	≤ 0.17	<0.001-0.023	<0.001-0.022	<0.001-0.003	<0.001-0.003
	SOx	mg/m^3	≤ 0.3	0.001-0.002	0.0015-0.0069	0.034-0.0404	0.0053-0.0054
	Total Suspended Particulate (TSP)	mg/m^3	≤ 0.33	0.027-0.045	0.032-0.092	0.021-0.046	0.032-0.069
	Particulate matter10 (PM10)	mg/m^3	<0.12	0.019-0.039	0.022-0.059	0.015-0.031	0.018-0.033
	Location 2: Khao Hin Lad Temple						
	NOx	ppm	≤ 0.17	0.001-0.019	0.005-0.046	<0.001-0.001	<0.001-0.018
	SOx	mg/m^3	≤ 0.3	0.002-0.005	0.0036-0.0047	0.0078-0.0082	0.0154-0.0236
	Total Suspended Particulate (TSP)	mg/m^3	≤ 0.33	0.020-0.050	0.057-0.097	0.017-0.031	0.024-0.061
	Particulate matter10 (PM10)	mg/m^3	<0.12	0.014-0.041	0.022-0.063	0.010-0.020	0.015-0.031
	Location 3: Khao Kan Song Moo.3 Community						
	NOx	ppm	≤ 0.17	0.002-0.015	<0.001-0.058	<0.001-0.010	0.004-0.030
	SOx	mg/m^3	⩽ 0.3	0.003-0.003	0.0111-0.0159	0.0035-0.0115	0.0010-0.0017
	Total Suspended Particulate (TSP)	mg/m^3	⩽ 0.33	0.031-0.067	0.069-0.107	0.020-0.043	0.024-0.060
	Particulate matter10 (PM10)	mg/m^3	<0.12	0.020-0.043	0.025-0.072	0.015-0.034	0.019-0.035
	Location 4: Siri Anusorn Community						
	NOx	ppm	≤ 0.17	0.001-0.020	<0.001-0.023	0.001-0.006	0.001-0.027
	SOx	mg/m^3	≤ 0.3	0.003-0.004	0.0035-0.0054	0.0123-0.0204	0.0192-0.0196
	Total Suspended Particulate (TSP)	mg/m^3	≤ 0.33	0.032-0.074	0.055-0.120	0.023-0.037	0.027-0.059
	Particulate matter10 (PM10)	mg/m^3	<0.12	0.016-0.038	0.027-0.063	0.008-0.031	0.014-0.032
	WHA EIE						
	Location 1: WHA EIE office						
	NOx	ppm	≤ 0.17	<0.001-0.009	0.001-0.038	<0.001-0.025	0.001-0.024
	SOx	mg/m^3	≤ 0.3	0.0029-0.0076	0.0059-0.0102	0.0032-0.0053	0.0034-0.0228
	Total Suspended Particulate (TSP)	mg/m^3	≤ 0.33	0.035-0.071	0.039-0.142	0.034-0.161	0.020-0.115
	Particulate matter10 (PM10)	mg/m^3	<0.12	0.010-0.027	0.018-0.082	0.015-0.077	0.018-0.055

GRI Standard	Performance	Unit	Standard	2016	2017	2018	2019
	Location 2: Nong Fab Temple						
	NOx	ppm	≤ 0.17	0.003-0.014	0.001-0.034	<0.001-0.022	<0.001-0.025
	SOx	mg/m^3	≤ 0.3	0.0037-0.0055	0.0081-0.0245	0.0278-0.0289	0.0037-0.0436
	Total Suspended Particulate (TSP)	mg/m^3	≤ 0.33	0.021-0.098	0.040-0.131	0.030-0.127	0.047-0.096
	Particulate matter10 (PM10)	mg/m^3	<0.12	0.011-0.040	0.029-0.075	0.014-0.066	0.027-0.055
	Location 3: Map Chalud Temple						
	NOx	ppm	≤ 0.17	0.005-0.021	<0.001-0.060	<0.001-0.016	<0.001-0.016
	SOx	mg/m^3	≤ 0.3	0.0005-0.0237	0.0072-0.0339	0.0024-0.0190	0.0198-0.0278
	Total Suspended Particulate (TSP)	mg/m^3	≤ 0.33	0.029-0.067	0.038-0.180	0.055-0.145	0.045-0.118
	Particulate matter10 (PM10)	mg/m^3	<0.12	0.012-0.027	0.021-0.093	0.023-0.081	0.023-0.055
	WHA RIL						
	Location 1: WHA RIL office						
	NOx	ppm	⩽ 0.17	<0.001-0.038	<0.001-0.033	<0.001-0.024	0.001-0.025
	SOx	mg/m^3	⩽ 0.3	0.002-0.005	<0.001-0.007	0.001-0.019	<0.001-0.041
	Total Suspended Particulate (TSP)	mg/m^3	⩽ 0.33	0.023-0.060	0.025-0.098	0.018-0.058	0.021-0.053
	Particulate matter10 (PM10)	mg/m^3	<0.12	0.013-0.033	0.015-0.049	0.008-0.044	0.015-0.032
	Location 2: Ban Sam Yak Community						
	NOx	ppm	≤ 0.17	<0.001-0.046	<0.001-0.024	<0.001-0.024	<0.001-0.030
	SOx	mg/m^3	≤ 0.3	<0.001-0.004	0.002-0.007	0.002-0.016	<0.001-0.002
	Total Suspended Particulate (TSP)	mg/m^3	≤ 0.33	0.021-0.063	0.025-0.084	0.023-0.057	0.017-0.049
	Particulate matter10 (PM10)	mg/m^3	<0.12	0.015-0.039	0.011-0.072	0.008-0.035	0.007-0.029
	Location 3: Nong La Lok Community						
	NOx	ppm	≤ 0.17	<0.001-0.023	<0.001-0.022	<0.001-0.032	0.001-0.029
	SOx	mg/m3	≤ 0.3	<0.001-0.007	<0.001-0.014	0.001-0.038	<0.001-0.006
	Total Suspended Particulate (TSP)	mg/m3	≤ 0.33	0.025-0.075	0.030-0.068	0.016-0.049	0.022-0.042
	Particulate matter10 (PM10)	mg/m3	<0.12	0.020-0.040	0.015-0.045	0.009-0.030	0.013-0.027

GRI Standard	Performance	Unit	Standard	2016	2017	2018	2019
	Location 4: Ban Klong Nam Yen Community						
	NOx	ppm	≤ 0.17	<0.001-0.042	<0.001-0.025	<0.001-0.023	<0.001-0.026
	SOx	mg/m3	≤ 0.3	<0.001-0.003	<0.001-0.011	<0.001-0.006	<0.001-0.006
	Total Suspended Particulate (TSP)	mg/m3	≤ 0.33	0.037-0.066	0.042-0.126	0.020-0.042	0.025-0.049
	Particulate matter10 (PM10)	mg/m3	<0.12	0.018-0.037	0.017-0.053	0.010-0.030	0.015-0.033
	WHA SIL						
	Location 1: WHA SIL office						
	NOx	ppm	≤ 0.17	<0.001-0.055	<0.001-0.008	0.002-0.019	<0.001-0.062
	SOx	mg/m3	≤ 0.3	<0.001-0.003	0.002-0.004	0.001-0.004	0.002-0.007
	Total Suspended Particulate (TSP)	mg/m3	≤ 0.33	0.035-0.163	0.051-0.111	0.059-0.117	0.069-0.121
	Particulate matter10 (PM10)	mg/m3	<0.12	0.013-0.081	0.015-0.038	0.019-0.066	0.031-0.087
	Location 2: Nong Pla Mo School						
	NOx	ppm	≤ 0.17	0.001-0.016	0.001-0.007	0.001-0.048	<0.001-0.051
	SOx	mg/m3	≤ 0.3	0.001-0.004	<0.001-0.002	0.001-0.003	<0.001-0.002
	Total Suspended Particulate (TSP)	mg/m3	≤ 0.33	0.043-0.129	0.050-0.088	0.084-0.264	0.079-0.204
	Particulate matter10 (PM10)	mg/m3	<0.12	0.020-0.057	0.021-0.033	0.041-0.099	0.040-0.104
	Location 3: Bua Loi Klang School						
	NOx	ppm	≤ 0.17	0.001-0.026	<0.001-0.009	0.001-0.035	0.001-0.032
	SOx	mg/m3	≤ 0.3	<0.001-0.004	<0.001-0.002	0.002-0.006	0.001-0.002
	Total Suspended Particulate (TSP)	mg/m3	≤ 0.33	0.046-0.110	0.048-0.066	0.045-0.077	0.073-0.132
	Particulate matter10 (PM10)	mg/m3	<0.12	0.023-0.069	0.017-0.030	0.025-0.043	0.045-0.079
	Location 4: Ban Mai Tung Din Khor School						
	NOx	ppm	≤ 0.17	<0.001-0.023	<0.001-0.009	0.001-0.016	<0.001-0.048
	SOx	mg/m3	≤ 0.3	0.001-0.003	<0.001	0.001-0.003	0.001-0.003
	Total Suspended Particulate (TSP)	mg/m3	≤ 0.33	0.025-0.106	0.036-0.088	0.053-0.100	0.066-0.146
	Particulate matter10 (PM10)	mg/m3	<0.12	0.014-0.056	0.016-0.048	0.042-0.059	0.036-0.080

* Remark : Not detected= ND Not analyzed= Na Not applicable= NA

Biodiversity

GRI Standard	Performance	Unit	2016	2017	2018	2019
304-1	Number of industrial estate located near protected areas	operation	1	2	2	2
	Number of industrial estate located near high biodiversity value area	operation	1	2	2	2
	Number of industrial estate that conducts biodiversity value assessment	operation	1	2	2	3
	Number of industrial estate required biodiversity management plan	operation	1	2	2	3
	Number of industrial estate implemented biodiversity management plan	operation	1	2	2	3

Environmental Compliance

GRI Standard	Performance	Unit	2016	2017	2018	2019
307-1	Non-compliance with environmental laws and regulations					
	Number of environmental non-compliance case	case	0	0	0	0
	Total amount of fines for environmental non-compliance	Baht	NA	NA	NA	NA

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FEEDBACK FORM:2019 SUSTAINABILITY REPORT

Reader Profile

Gender ☐ Female ☐ Male ☐ Not Specified

Age ☐ Below 25 years old ☐ 25 - 40 ☐ 41 - 60 ☐ More Than 60

Relationship with WHA Group (Please select 1 answer)

☐ Shareholder/Investor ☐ Customer ☐ Employee ☐ Supplier and Creditor ☐ Competitor

☐ Government / Regulator ☐ Community

Why do you prefer reading this Sustianability report?

☐ For support investment decision ☐ For understanding more about WHA's business

☐ Research and educational purposes ☐ Other (Please specify.....)

Your satisfaction with the presentation format of "Sustainable Report"

Content easy to understand	☐ High	☐ Medium	☐ Dissatisfied
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Reliable information	☐ High	☐ Medium	☐ Dissatisfied
The design of this report	☐ High	☐ Medium	☐ Dissatisfied
Readability	☐ High	☐ Medium	☐ Dissatisfied
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After reading this annual report, are you confident that WHA potentially achieves the sustainable growth?

☐ Yes, because.....

☐ No, because.....

☐ No idea, because.....

In your opinion, which is the most significant aspect toward WHA sustainable growth?

☐ Economy (Please specify.....)

☐ Environment (Please specify.....)

☐ Society (Please specify.....)

Suggestions

Please specify other suggestions for development and improvement of Sustainability Report of the following year

.....

.....

Thank you for your information and valuable opinion which advantages

us for improvement of next issue of the report.

Questionnaire can be sent by postal mail or email to:

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