



WHA Utilities and Power Public Company Limited

WHA : WE SHAPE THE FUTURE



UTILITIES AND POWER
SUSTAINABILITY REPORT 2024



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Message from the Chief Executive Officer (CEO)





CEO MESSAGE

In 2024, the global economy continued to face significant challenges from various uncertainties, including international trade tensions, geopolitical shifts, and issues arising from global warming – all of which directly impacted diverse business operations. Despite this, WHA Utilities and Power Public Company Limited (WHAUP) firmly rooted in a steady growth by focusing on the development of sustainable strategies and fostering innovation to adapt to changes across all dimensions. This year, WHAUP remains dedicated to introducing new technologies that will be crucial tools for driving business growth in the digital era, particularly in Artificial Intelligence (AI), blockchain, and clean technology, to meet future challenges and opportunities.

WHAUP, as a utilities and power system management service provider, plays a vital role in promoting the sustainable use of natural resources and environment conservation, while addressing climate change. We remain committed to strengthening our sustainability strategy in collaboration with WHA Group. This commitment grounds us for conducting business based on ESG principles (Environmental, Social, and Governance) to ensure compliance with all relevant sustainability regulations, rules, and best practices. We also strive to meet the expectations

of all stakeholders. Although WHAUP successfully achieved carbon neutrality in 2021, we will continue to be a significant contribution to reduce greenhouse gas emissions continuously, with a target of Net Zero emissions by 2050 that aligns with Thailand's national target for carbon neutrality by 2050 and Net Zero emissions by 2065.

The Group, together with WHA Group, is driving full-scale digital transformation under the "Mission To The Sun" project. This initiative integrates innovative technology into all business sectors, leveraging platform technology along with the organization's strong infrastructure. As such, WHAUP is progressing towards becoming a tech company and aims to be a tech-driven organization by 2025 together with WHA Group with the goal to become a leading utilities and power services provider in the region.

In 2024, WHAUP remained steadfast in its commitment to uplifting technology and innovation to tackle climate change and foster long-term sustainability. A key focus lies in renewable energy and efficient water management through the installation of solar rooftops, solar farms, and floating solar systems across industrial and commercial sectors. We also expanded our energy portfolio business through Private Power Purchase Agreements (PPAs) and launched a Peer-to-Peer (P2P) electricity trading

platform using blockchain technology to increase accessibility and flexibility of clean energy use. In addition, WHAUP leveraged Artificial Intelligence (AI) to develop advanced systems such as Solar Anomaly, which accurately detects solar panel malfunctions, and Solar Forecasting, which consistently predicts solar energy production volumes. These innovations not only help reduce costs but also improve the reliability of the electricity grid. In 2024, WHAUP's solar energy business helped reduce indirect greenhouse gas emissions by 61,808 tons of carbon dioxide equivalent (tCO₂e). WHAUP has set long-term goals to expand the renewable energy generation capacity to 1,200 MW by 2029. This will reduce greenhouse gas emissions by 683,000 tCO₂e per year.

Beyond energy, WHAUP places sustainable water management as top priority. The Company seeks to minimize dependence on natural water sources through reclaiming treated wastewater. We plan to reduce natural water consumption by 25 million cubic meters annually by 2029.

In terms of waste management, the Company embraces Circular Economy principles in waste management strategy, with the goal of achieving Zero Waste, or eliminating landfilling and incineration of waste by 2029.

In addition, WHAUP adheres our commitment to sustainable business practices both within and beyond our organization, considering the impact on communities, society, and all stakeholders guided by WHA Group’s mission, “WE SHAPE THE FUTURE,” to create opportunities and a sustainable future for Thailand through businesses that consider long-term impacts on stakeholders in terms of environmental quality, health, and safety, as well as generating positive outcomes for communities and society, upholding sustainability in line with the United Nations Sustainable Development Goals (SDGs). Furthermore, WHAUP continues to uphold the principles of integrity, fairness, and transparency in our business operations in all aspects of our business, nurturing an organizational culture built on transparency, ethics, and social responsibility. Our commitment to Environmental, Social, and Governance (ESG) has earned the highest level “AAA” for the second consecutive year in the SET ESG ratings and has been named among top sustainable stocks in the Resources sector for the fifth consecutive year by the Stock Exchange of Thailand. These achievements reflect our unwavering dedication to sustainable growth in utility and clean energy sectors, domestically and internationally, while ensuring environmental stewardship, social responsibility and adhering to good governance (ESG) principles, establishing us as one of the leading sustainable utilities and power producers.

In 2024, it has been a remarkable year for the Company both business operations and sustainability development. WHAUP reported total revenue and normalized share of profit of THB 3,959 million, a normalized net profit of THB 1,118 million, and a net profit of THB 1,119 million with total asset value of THB 31,247 million as of 31 December 2024. We will continue to drive our water and power businesses forward by leveraging new innovations and expanding investments domestically and internationally. None of these achievements would have been possible without the support of all parties, including the Board of Directors, management teams, employees, partners, shareholders, and customers. On behalf of the Chief Executive Officer of WHA Utilities and Power Public Company Limited, I would like to express my gratitude to all stakeholders for their continued trust and support which are the driving force behind our journey of sustainable growth.



Mr. Somkiat Masunthasuwun

WHA Utilities and Power Public Company
Limited



2024 AWARDS AND MEMBERSHIP

HIGHEST “AAA” RATING IN SET ESG RATING 2024



WHA Utilities and Power Public Company Limited (WHAUP) has once again received the prestigious “AAA” rating, the highest level in SET ESG Ratings 2024. This marks the 2nd consecutive year, WHAUP has achieved this top rating. Furthermore, the Company has been listed as Thailand Sustainability Investment (THSI) in the Resources sector for the fifth consecutive year by the Stock Exchange of Thailand. This outstanding achievement positions WHAUP as one of 228 listed companies that met the rigorous criteria for SET ESG Ratings, and one

of 56 listed companies to receive the “AAA” Rating. This recognition powerfully underscores an unwavering commitment to driving business growth in both our domestic and international utility (water) and clean energy power business. It also highlights the Company dedication to environmental stewardship, social responsibility, and strong governance, reinforcing on ESG principles. This consistent recognition reflects WHAUP’s leadership in providing sustainable utilities and power services.

ESG 100 STOCK LIST IN 2024

WHA Utilities and Power Public Company Limited (WHAUP) has been recognized in 2024 ESG100 Ranking by Thailand Institute of Development (Thaipat Institute). This prestigious list features companies selected from over 920 listed companies nationwide, and highlights those with outstanding Environmental, Social, and Governance (ESG) performance. Notably, WHAUP has also been included in the “ESG Emerging List” for the first time. This dual recognition truly underscore



our commitment to operating the utilities and power businesses under a framework of genuine sustainable growth.

“GOOD PEOPLE, PROTECT THE WORLD” AWARD



WHA Utilities and Power Public Company Limited (WHAUP) has proudly received “Good People, Protect the World” Award from the Senate Committee on Religions, Morals, Ethics, Arts and Culture. This prestigious award recognizes and celebrates organizations demonstrate strong principles and effective practices in promoting and raising awareness about the critical importance of natural resource conservation. WHAUP’s recognition stems from its unwavering commitment to sustainable business practices, guided by its robust Environmental Quality and Energy Conservation Policy. This commitment is evident in our strategic expansion into renewable energy investments and our comprehensive water management approach, which encompasses everything from securing alternative water sources to ensuring the proper treatment of wastewater before discharge outside the industrial areas. This award truly reflects WHAUP’s dedication to leveraging its expertise, experience, and technological innovation, including AI applications, to actively contribute to environmental stewardship. Our efforts include addressing global warming, reducing carbon emissions, and championing the use of renewable energy all vital steps towards a more sustainable future.

EXCELLENCE CG SCORING (5 STARS) IN CORPORATE GOVERNANCE REPORT (CGR)



WHA Utilities and Power Public Company Limited (WHAUP) is honored to announce its achievement of an “Excellent CG Scoring” or 5-star rating, in the 2024 Corporate Governance Report of Thai listed companies (CGR). This marks the sixth consecutive year that WHAUP has received top-tier assessment from Thai Institute of Directors (IOD), conducted with the support of the Stock Exchange of Thailand (SET). This sustained recognition as an “Excellent CG” rated company powerfully reflects WHAUP’s continuous commitment to continuous commitment to conducting business in accordance with good corporate governance principles,. WHAUP prioritize transparency and accountability to all stakeholders. WHAUP firmly recognizes the importance of an effective corporate governance system, understanding it as the fundamental cornerstone for building confidence among investors, shareholders, business partners, and society as a whole.



2024 AWARDS AND MEMBERSHIP

WHAUP is committed to adhering to sustainable business practices. To this end, we have coordinated with and supported numerous organizations to build a strong network of alliances, enhancing opportunities for sustainable growth. One of our achievements that reflects our dedication to business integrity and transparency is its certification as a member of the Thai Private Sector Collective Action Against Corruption (CAC) in November 2019. This membership was renewed in 2022, and we plan for another renewal by December 2025.

In addition, our success in also stems from collaboration with various associations and organizations, as follows:

1. Thai Industrial Estate and Strategic Partner Association (TISA)
2. The Federation of Thai Industries (FTI)
3. Thai Photovoltaic Industries Association (TPVA)
4. Water and Environment Institute for Sustainability (WEIS)
5. Thailand Carbon Neutral Network (TCNN)
6. Thailand CCUS Alliance (TCCA)



ABOUT THIS REPORT

WHA Utilities and Power Public Company Limited (WHAUP) has published a sustainability report annually since 2019 to communicate WHAUP's management approach to stakeholders as well as to demonstrate practices of running business in a sustainable manner in terms of the governance/ economic, social and environment. This report is WHAUP's 6th sustainability report, which covers the period from 1st January to 31st December 2024, aligning with the financial disclosure in WHAUP Form 56-1 One Report 2024.

The report has been prepared in accordance with Global Reporting Initiative Standards 2021 (GRI 2021) since 2022. WHAUP has used a process to assess key sustainability issues that align with the Double Materiality Principle under the Global Reporting Initiative (GRI) framework and the organization's Enterprise Risk Management guidelines, which are effective and comprehensive. The assessment identified seven material sustainability issues, including Corporate Governance and Ethics, Technology and Innovation, Occupational Health and Safety, Community Development and Stakeholder Engagement, Climate Strategy, Energy Management, and Water Management. The report also highlights the

progress and performance of WHAUP's sustainable development goals aligned with the United Nations Sustainable Development Goals (UN SDGs). The information in this report encompasses the business operations of WHA Group, including our subsidiaries in Thailand and Vietnam, where WHAUP holds a majority stake of over 50% and has managerial authority.

This report did not receive external party verification, but the contents and data were reviewed and approved by top executives from relevant functions to ensure our accuracy and completeness.

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VISION

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



MISSION

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

To continuously develop human resources competencies to build talent and experience to enhance organizational core competency including encouraging workplace environment for employee wellbeing.

To add value to communities and the environment with good corporate governance and sustainable development strategies.

01

To vertically integrate solutions in utilities and power businesses and expand other market segment to increase products and services in Thailand and other Southeast Asia Countries.

02

03

04

To nurture an innovative culture in the organization.

05





GOALS

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



STRATEGY



Continuously improving utilities business and power business in terms of quality and innovation to ensure the constant and predictable generation of income, maximize profit and add value to shareholders



Applying our expertise in management with respect of infrastructure, environment and good relationships with customers and stakeholders with the aim of expanding our business opportunities.



Emphasizes the application of technology to enhance products and services that address customer needs in alignment with ESG (Environmental, Social, and Governance) principles, strengthening sustainability and generating positive impacts on the environment, society, and corporate governance.



Expanding business beyond industrial estates to broaden the market and increase growth opportunities, with a focus on innovation development and the diversification of business channels for broader market coverage.

CORE VALUES

“ADVANCED”

Think, plan, and initiate new things to deliver values that help create sustainable growth for customers and contribute to the organization’s breakthrough.

“RESOURCEFUL”

Determined to continuously develop ourselves to gain deep and thorough knowledge in what we do, diligently working to enhance our skills and experiences to boost confidence and deliver value to others professionally.

“CHAMPION”

Determined to create success in everything we do, not stuck on failure or success in the past but striving to push ourselves beyond the limits to overcome new challenges and create a sense of unity together.

“INTEGRITY”

Living with honesty, integrity, firm in our commitments to earn trust and confidence from others and collaboratively build and maintain transparency in our working culture.

WHA Utilities and Power Public Company Limited (WHAUP)” was established on June 30, 2008, as a subsidiary of “WHA Corporation Public Company Limited (WHA Group)” and registered securities with the Stock Exchange of Thailand on April 10, 2017. WHAUP operates utility and energy businesses, adhering to international standards, providing services to customers and partners both within and outside industrial estates. WHAUP’s main businesses include (1) Utilities: sourcing and distributing raw water, producing and supplying industrial water, managing wastewater treatment, and developing raw water sources vertically integrated for manufacturers and operators within industrial estates and (2) Power: generating and distributing electricity, using both conventional fuels and renewable energy, including solar power plant projects, as well as investing in natural gas distribution and retailing. Each developed and operated project adheres to the principles of Operational Excellence and is committed to integrating technology significantly into utility and energy operations to meet the expectations of stakeholders and the environment in all aspects. WHAUP aims to become “The Ultimate Solution for Sustainable Growth” and has plans to expand business both vertically and horizontally, alongside the transformation into a Tech-Drive Organization by 2025.

WHA strictly abides by the regional regulations prescribed under the Ministry of Industry, Ministry of Labor, Industrial Estate Authority of Thailand (IEAT), Stock Exchange of Thailand (SET), Ministry of Natural Resources and Environment as well as internal standards such as the UN SDGs. In 2024, WHAUP was awarded a “AAA” rating which is the highest level under the SET ESG Ratings assessment conducted by the Stock Exchange of Thailand (SET). This marks the fifth consecutive year since 2020, reflecting our strong commitment to advancing business toward growth in the utilities (water) and clean energy sectors, both domestically and internationally along with the environment, social and corporate governance (ESG) principles to mark the WHAUP position as a leader in sustainable utility and energy services.



Utilities & Power Business

WHA Utilities and Power Public Company Limited (“WHAUP”) provides comprehensive utility services to industrial operators located within WHA’s industrial estates and industrial lands. Its core services include the sourcing and distribution of raw water, the production and distribution of industrial water, the sale of value-added water products, and the provision of industrial wastewater treatment services.

In addition, WHAUP operates in the power business, both through direct operations and joint investments in power plant projects in Thailand and abroad, in collaboration with experienced partners in the electricity generation and distribution sector.

These projects encompass both conventional fuel-based power generation and renewable energy.

**“INTEGRATED
INDUSTRIAL UTILITIES &
POWER PROVIDER WITH
SOLID BUSINESS GROWTH”**





166

Million m³ **Water Sales & Management.**



Continue to expand the **Value-added Water**, as well as Capture Opportunities Outside **WHA Territory.**



Total installed capacity approximately

965

MWeq.



437

MWeq **secured PPA's for renewable energy.**



158

GWh

for Solar Energy Dispatch and the trend is expected to continue growing.



UTILITIES BUSINESS

WHAUP serves manufacturers and operators, both within and operating outside, WHA's industrial estates and industrial lands across Thailand and Vietnam. The utilities business includes products or services as follows:

1. PROCUREMENT AND DISTRIBUTION OF RAW WATER

WHAUP provides raw water sourcing and distribution services to industrial operators within WHA Group's industrial estates. Raw water is offered as an alternative water supply option for industrial users. Our key customers include the petrochemical industry, steel industry, Independent Power Producers (IPPs) and Small Power Producers (SPPs).

2. PRODUCTION AND DISTRIBUTION OF INDUSTRIAL WATER OF INDUSTRIAL WATER

Industrial water produced and distributed by WHAUP can be divided into 4 categories:

1. Process water is industrial water that has undergone the processes of sedimentation, filtration and chlorination for disinfection. The final product is used in the production process in industrial plants in general. WHAUP's core customers include those in the automotive industry (e.g. automotive assembly plants and auto part manufacturing plants), food industry and electronics industry.
2. Clarified water is produced through the processes of sedimentation, filtration and chlorination. Lower quantity and concentration of chlorine is used in chlorination process for clarified water, compared to process water, so that a very small amount of chlorine is left in the clarified water product when it is distributed to customers. This product is in great demand for customers in heavy industries such as petrochemical, given that chlorine may cause corrosion in machinery and equipment used in those industries.
3. Premium clarified water is the clarified water produced using the membrane technology (Reverse Osmosis) and has higher quality compared to the clarified water. In 2023, it was the first year that WHAUP began providing this type of water service at Eastern Seaboard Industrial Estate (Rayong).

4. Demineralized water is the highly purified water where most of essential minerals are removed. It is used in some industry such as power plant, petrochemical, electronics etc.

3. WASTEWATER TREATMENT

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

4. RAW WATER RESOURCES DEVELOPMENT

WHAUP has initiated a water resource development project to enhance operational efficiency and strengthen the sustainability of our utilities business. In 2021, medium-sized water sources are being developed in the vicinity of WHA's industrial estate in the Eastern Economic Corridor (EEC).

WHAUP group has a policy to provide other types of utilities to the operators inside and outside WHA's industrial estates. In 2022, WHA Water Co., Ltd. (WHAWT), a 99.99% owned subsidiary of the WHAUP Group, established a joint venture named "WHAUP Asia Reclaimed Water" (WHAUP AIE), a joint venture with Asia Industrial Estate Co., Ltd. to provide utility services within Asia Industrial Estate (Map Ta Phut) with production capacity for demineralized water about 1 million cubic meters per year. Water supply already began to distribute to customers in the fourth quarter of 2022. In addition, WHAUP Group has been certified for ISO 9001:2015 quality management system standards and ISO 14001:2015 environmental management system standards.

Since 2019, WHAUP had expand the business to Vietnam by investing in utility project which sell tap water in Vietnam in order to provide tap water in industrial estates of WHA. Moreover, WHAUP Group has partially invested in shares of the company operating the tap water business in Vietnam for two companies are Cua Lo Water Supply, which is the producer and the distributor of tap water in Nghe An and Duang River Surface Water Plant (SDWTP), which is one of the leading tap water providers of Hanoi with the shareholding ratios of 47% and 34% respectively.

LOCATION AND NATURE OF UTILITIES BUSINESS

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

Location	The Land on Which the Property is Located		Property Ownership		Nature of Business ^{1/}
	Leased Land	Utility Land	The Company and Sub-sidiaries	Developer	
WHA Chonburi Industrial Estate 1 (WHA CIE 1)					
Industrial Water Plant		✓		✓	50-year lease of operating rights
Wastewater Treatment Plant		✓		✓	50-year lease of operating rights
WHA Chonburi Industrial Estate 2 (WHA CIE 2)					
โรงผลิตน้ำเพื่ออุตสาหกรรม		✓	✓		เช่าสิทธิในการดำเนินงาน 50 ปี
โรงบำบัดน้ำเสีย		✓		✓	เช่าสิทธิในการดำเนินงาน 50 ปี
WHA Eastern Industrial Estate (Map Ta Phut) (WHA EIE)					
Industrial Water Plant	✓ ^{2/}		✓ ^{2/}		Ownership
Wastewater Treatment Plant		✓ ^{3/}		✓ ^{3/}	50-year lease of operating rights
Industrial Water Plant		✓		✓	50-year lease of operating rights
Eastern Seaboard Industrial Estate (Rayong) (ESIE)					
Industrial Water Plant		✓		✓	25-year lease of operating rights ^{4/}
Wastewater Treatment Plant		✓		✓	Management agreement
WHA Saraburi Industrial Land (WHA SIL)					
Industrial Water Plant		✓		✓	50-year lease of operating rights
Wastewater Treatment Plant		✓		✓	50-year lease of operating rights
WHA Rayong Industrial Land (WHA RIL)					
Industrial Water Plant		✓		✓	50-year lease of operating rights
Wastewater Treatment Plant		✓		✓	50-year lease of operating rights
WHA Eastern Seaboard Industrial Estate 1 (WHA ESIE 1)					
Industrial Water Plant	✓ ^{5/}	✓ ^{5/ 6/}	✓ ^{5/}	✓ ^{6/}	50-year lease of operating rights
Wastewater Treatment Plant		✓		✓	50-year lease of operating rights
WHA Eastern Seaboard Industrial Estate 2 (WHA ESIE 2)					
Industrial Water Plant	✓		✓		50-year lease of operating rights
Wastewater Treatment Plant		✓		✓	50-year lease of operating rights

Location	The Land on Which the Property is Located		Property Ownership		Nature of Business ^{1/}
	Leased Land	Utility Land	The Company and Subsidiaries	Developer	
WHA Eastern Seaboard Industrial Estate 3 (WHA ESIE 3)					
Industrial Water Plant	✓		✓		50-year lease of operating rights
Wastewater Treatment Plant		✓		✓	50-year lease of operating rights
WHA Eastern Seaboard Industrial Estate 4 (WHA ESIE 4)					
Industrial Water Plant	✓		✓		50-year lease of operating rights
Wastewater Treatment Plant		✓	✓		50-year lease of operating rights
WHA Logistics Park 1 (WHA LP 1)					
Industrial Water Plant		✓		✓	Management agreement
Wastewater Treatment Equipment	✓ ^{7/}			✓	Management agreement
WHA Industrial Zone 1 – Nghe An, Vietnam					
Industrial Water Plant	-	-	-		50-year lease of operating rights
Wastewater Treatment Plant		✓		✓	50-year lease of operating rights
Eastern Economic Corridor of Innovation (EECI)					
Industrial Water Plant	-	-	-	-	-
Wastewater Treatment Plant	✓		✓		50-year lease of operating rights
WHA Rayong 36 Industrial Estate (WHA Rayong 36)					
Industrial Water Plant	✓		✓		50-year lease of operating rights
Wastewater Treatment Plant		✓		✓	50-year lease of operating rights
Asia Industrial Estate Map Ta Phut (AIEMTP)^{8/}					
Industrial Water Plant		✓	✓		30-year of operating rights under throughput agreement
WHA Industrial Estate Rayong (WHA IER)					
Industrial Water Plant	✓		✓		50-year lease of operating rights
Wastewater Treatment Plant		✓		✓	50-year lease of operating rights

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

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

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

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

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

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

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

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

Currently, WHAUP operates 20 industrial water production plants and 13 wastewater treatment facilities within WHA's industrial estates and industrial lands. There are a total of 12 operating industrial estates in Thailand, with an additional 2 industrial estates under development, making a total of 14 industrial estates in the country. WHAUP also operates 1 industrial estate in Vietnam. In addition, there are 2 industrial water production plants located outside WHA's industrial estates. WHAUP has a total maximum industrial water production capacity of 383,576 cubic meters per day and a total maximum wastewater treatment capacity of 138,056 cubic meters per day. Further details are as follows:

Industrial estates and industrial lands	Location	Industrial water production capacity ^{1/} (Cubic meters/day)	Wastewater treatment capacity ^{1/} (cubic meters/day)
WHA Eastern Industrial Estate (Map Ta Phut) ("WHA EIE")	Map Ta Phut, Rayong	18,000	8,400
Eastern Seaboard Industrial Estate (Rayong) ("ESIE")	Pluakdaeng, Rayong	6,000	1,600
WHA Eastern Seaboard Industrial Estate 1 ("WHA ESIE 1")	Pluakdaeng, Rayong	159,400 ^{2/}	60,000
WHA Chonburi Industrial Estate 1 ("WHA CIE 1")	Sriracha, Chonburi	53,200 ^{3/}	- ^{4/}
WHA Chonburi Industrial Estate 2 ("WHA CIE 2")	Sriracha, Chonburi	30,576	14,976
WHA Saraburi Industrial Land ("WHA SIL")	Nongkae, Saraburi	14,400	12,480
WHA Rayong Industrial Land ("WHA RIL")	Bankhai, Rayong	57,800 ^{5/}	18,200
WHA Eastern Seaboard Industrial Estate 2 ("WHA ESIE 2")	Pluakdaeng, Rayong	12,000	10,000
WHA Eastern Seaboard Industrial Estate 4 ("WHA ESIE 4")	Pluakdaeng, Rayong	3,600	1,500
WHA Eastern Seaboard Industrial Estate 3 ("WHA ESIE 3")	Banbung / NongYai, Rayong	11,600	1,500
WHA Industrial Zone 1 – Nghe An, Vietnam	Nghe An, Vietnam	12,000	3,200
Eastern Economic Corridor of Innovation ("EECi")	Wangchan, Rayong	-	600
WHA Rayong 36 Industrial Estate ("WHA Rayong 36")	Panankom, Rayong	2,500	3,000
Asia Industrial Estate Map Ta Phut (AIEMTP)	Banchang, Rayong	2,500 ^{6/}	-
WHA Industrial Estate Rayong (WHA IER)	Bankhai, Rayong	- ^{7/}	2,600
Total		383,576	138,056

Notes:

^{1/} Most of the industrial water production plants and wastewater treatment plants in the above table are owned by the WHAID. On March 30, 2016, the Company and the WHAID entered into the Right Lease Agreement, which allows the Company to use those facilities to conduct its business for 50 years from the signing date.

^{2/} Two Demineralized Water production plants and Wastewater Reclamation plant with total capacity of 12,000 and 25,000 cubic meters per day.

^{3/} On July 1, 2008, the Company and Eastern Seaboard Industrial Estate (Rayong) Company Limited entered into the Right Lease Agreement for the operation and distribution of industrial water in Eastern Seaboard Industrial Estate (Rayong), which has a term of 25 years ending on June 30, 2033.

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

^{5/} One Premium Clarified Water production plant with total capacity of 3,800 cubic meters per day.

^{6/} One Demineralized Water production plants with total capacity of 2,500 cubic meters per day. Which is a Wastewater Reclamation produce to Demineralized Water.

^{7/} The project utilizes the industrial water from WHA Eastern Seaboard Industrial Estate 4's water treatment plant.

ENERGY BUSINESS

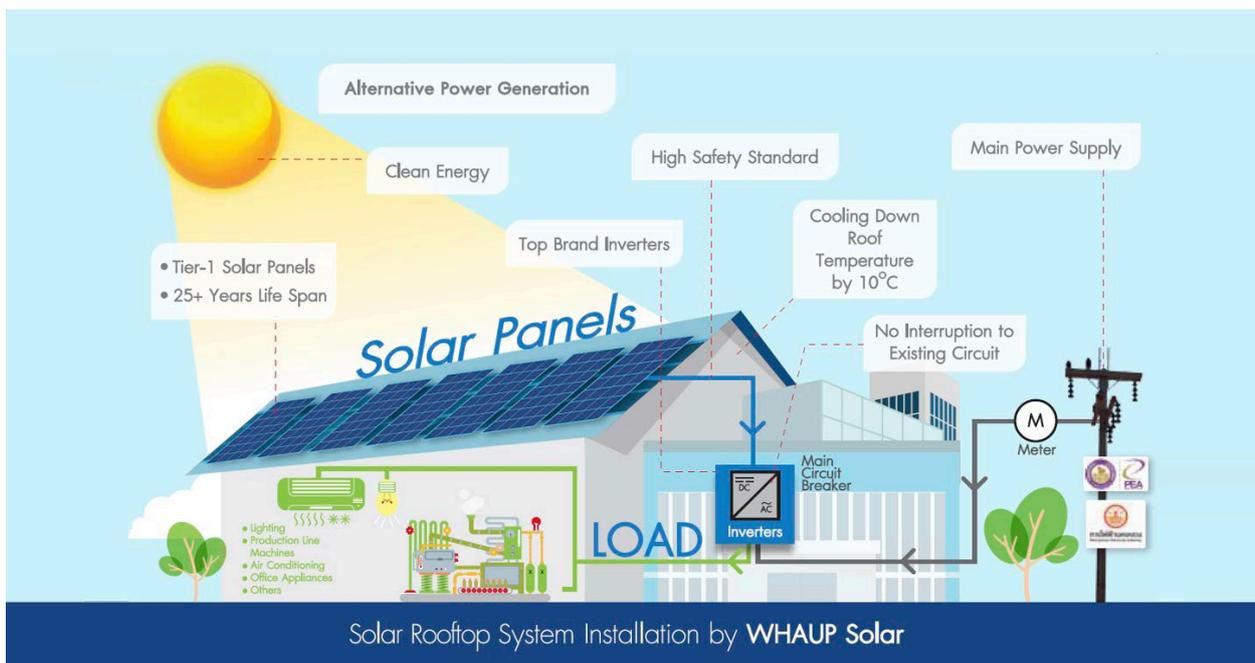


CONVENTIONAL FUEL

WHAUP collaborates with major Independent Power Producers (IPP), Small Power Producers (SPP), and Very Small Power Producers (VSPP) through investments in various companies. Commercially operational power plants, with a combined capacity of approximately 528 megawatts, are currently in operation according to the proportional shareholding. Additional details of these commercially operational power plants invested by WHAUP are provided in Form 56-1 One Report 2024.

SOLAR ENERGY

WHAUP is an experienced service provider in the installation of solar energy systems, offering installation of solar panels in warehouses of WHA Group and other companies. Besides the extensive experience as a service provider, WHAUP conducts business in an environmentally friendly manner. WHAUP implemented a new technology e.g., Energy Storage by initiating the 820 kW solar rooftop with 550 kW Battery Energy Storage System (BESS) to distribute power to the utility system within Eastern Seaboard Industrial Estate (Rayong). The commercial operation date is November 2021. The said structure can reduce the energy cost by approximately 4 Million Baht per year and reduce CO2 offset emission by 10,500 tons.





WASTE TO ENERGY

WHAUP places strong emphasis on clean energy development and sustainable waste management. Therefore, WHAUP has partnered with Global Power Synergy Public Company Limited and Veolia Environmental Services (Thailand) Company Limited (formerly known as Suez Services (Thailand) Company Limited) in the Chonburi Clean Energy (CCE). CCE is located within WHA Chonburi Industrial Estate 1 (WHA CIE 1). This power plant has the capacity to generate electricity by converting non-hazardous waste to energy at 400 tons per day, or approximately 100,000 tons per year, enabling a maximum output of 8.63 MW of electricity energy per year. CCE is the first industrial waste-to-energy plant in Southeast Asia to meet European emission control standards. It has also been recognized by the Energy Regulatory Commission and the Ministry of Industry as the first such facility within the

Eastern Economic Corridor (EEC). The project is aligned with circular economic principles and serves as a model for sustainable industrial waste management.



NATURAL GAS DISTRIBUTION PROJECTS

Natural gas is a clean and cost-effective energy source, making it the primary fuel for industries in the present and the future. It serves as a substitute for fuel oil or diesel. Additionally, distributing natural gas through pipeline systems can help reduce transportation risks, decrease traffic congestion in the area, and provide a higher level of safety. Moreover, WHAUP's gas pipeline system is connected to PTT's natural gas pipeline system, enhancing the reliability and security of fuel supply for customers.

For the natural gas distribution and retail business, WHAUP has invested and commenced commercial electricity production in two projects: WHANGD2 and WHANGD4 projects are pipeline distribution and retail gas supply projects for industrial customers in WHA Eastern Seaboard Industrial Estate 2 (WHA ESIE 2) and WHA Eastern Seaboard Industrial Estate 4 (WHA ESIE 4). These estates are located in the Eastern Economic Corridor (EEC) region. Both projects have the capacity to distribute approximately 3,000,000 billion BTUs of natural gas per year, or estimated according to WHAUP's shareholding proportion at 1,050,000 billion BTUs per year.



LOCATION AND NATURE OF POWER BUSINESS

WHAUP conducts power business itself or by holding equity in other power generating and distribution companies in Thailand and oversea and also runs the own solar power generation business. Additionally, WHAUP invests in the natural gas distribution and retail business. The details of the locations of power plant projects are as follows:

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

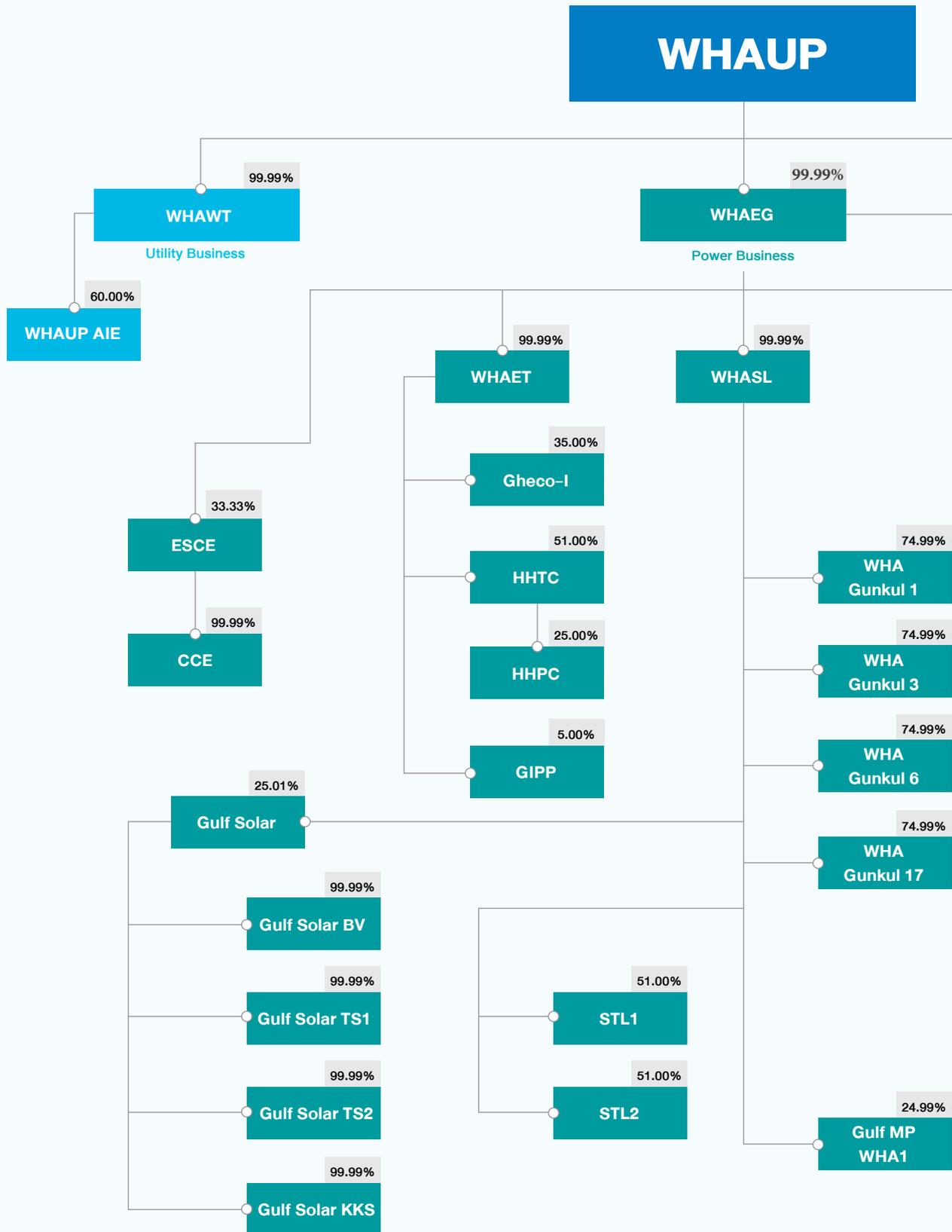
Power plant	Location	Type of power	Category of Plant	Equity holding (percent.)	Installed power generating capacity			Capacity in proportion to equity		Commercial Operation Date
WHA Gunkul Green Solar Roof 6	WHA Mega Logistics Centre, Bangna-Trad KM.18	Solar power	VSPP	74.99%	Power	0.83	MW	0.62	MW	April 2014
WHA Gunkul Green Solar Roof 17	WHA Mega Logistics Centre, Wangnoi 61, Ayutthaya	Solar power	VSPP	74.99%	Power	1.00	MW	0.73	MW	July 2014
Joint venture in power plant projects with B.Grimm Power Group										
BPWHA-1	WHA CIE 1	Gas-fired cogeneration	SPP	25.01%	Power	130	MW	33	MW	November 2016
Joint venture with Gulf MP Company Limited										
Gulf VTP	ESIE	Gas-fired cogeneration	SPP	25.01%	Power	137	MW	34	MW	May 2017
					Steam	20	TPH	5	TPH	
Gulf TS1	ESIE	Gas-fired cogeneration	SPP	25.01%	Power	134	MW	34	MW	June 2017
					Steam	30	TPH	8	TPH	
Gulf TS2	ESIE	Gas-fired cogeneration	SPP	25.01%	Power	134	MW	34	MW	September 2017
					Steam	30	TPH	8	TPH	
Gulf TS3	WHA ESIE 1	Gas-fired cogeneration	SPP	25.01%	Power	130	MW	32	MW	November 2017
					Steam	25	TPH	6	TPH	
Gulf TS4	WHA ESIE 1	Gas-fired cogeneration	SPP	25.01%	Power	130	MW	32	MW	January 2018
					Steam	25	TPH	6	TPH	
Gulf NLL 2	WHA RIL	Gas-fired cogeneration	SPP	25.01%	Power	127	MW	32	MW	January 2019
					Steam	10	TPH	3	TPH	
Joint venture with Gulf MP1 Company Limited										
Solar power plants	-	Solar Power	Private PPA	24.99%	Power	10	MW	3	MW	July - December 2024

Power plant	Location	Type of power	Category of Plant	Equity holding (percent.)	Installed power generating capacity			Capacity in proportion to equity		Commercial Operation Date
Joint venture with GPSC Group and SUEZ										
CCE	WHA CIE 1	Waste-to-Energy	VSP	33.33%	Power	8.6	MW	2.9	MW	November 2019
Joint venture with Gulf MP1 Company Limited										
Solar power plants		Solar Power	Private PPA	24.99%	Power	11.5	MW	2.9	MW	July December 2024
2) Information about the commercially operating power plants by WHAUP Group (Sole Proprietorship)										
Solar power plants	-	Solar Power	Private PPA	100%	Power	148	MW	148	MW	May 2018-December 2024
Total Combined 1) and 2)					Power	2,740	MW	701	MW	
Consisted of: Commercially operating power plants in terms of JV and WHAUP sole proprietorship					Steam	178	TPH	46	TPH	
					Chilled water	4,600	RT	1,150	RT	



BUSINESS STRUCTURE OF WHAUP GROUP

The Company's investment structure as of 31 December 2024:



STRUCTURE OF CORPORATE GOVERNANCE

The Company's Corporate Governance structure as of 31 December 2024:

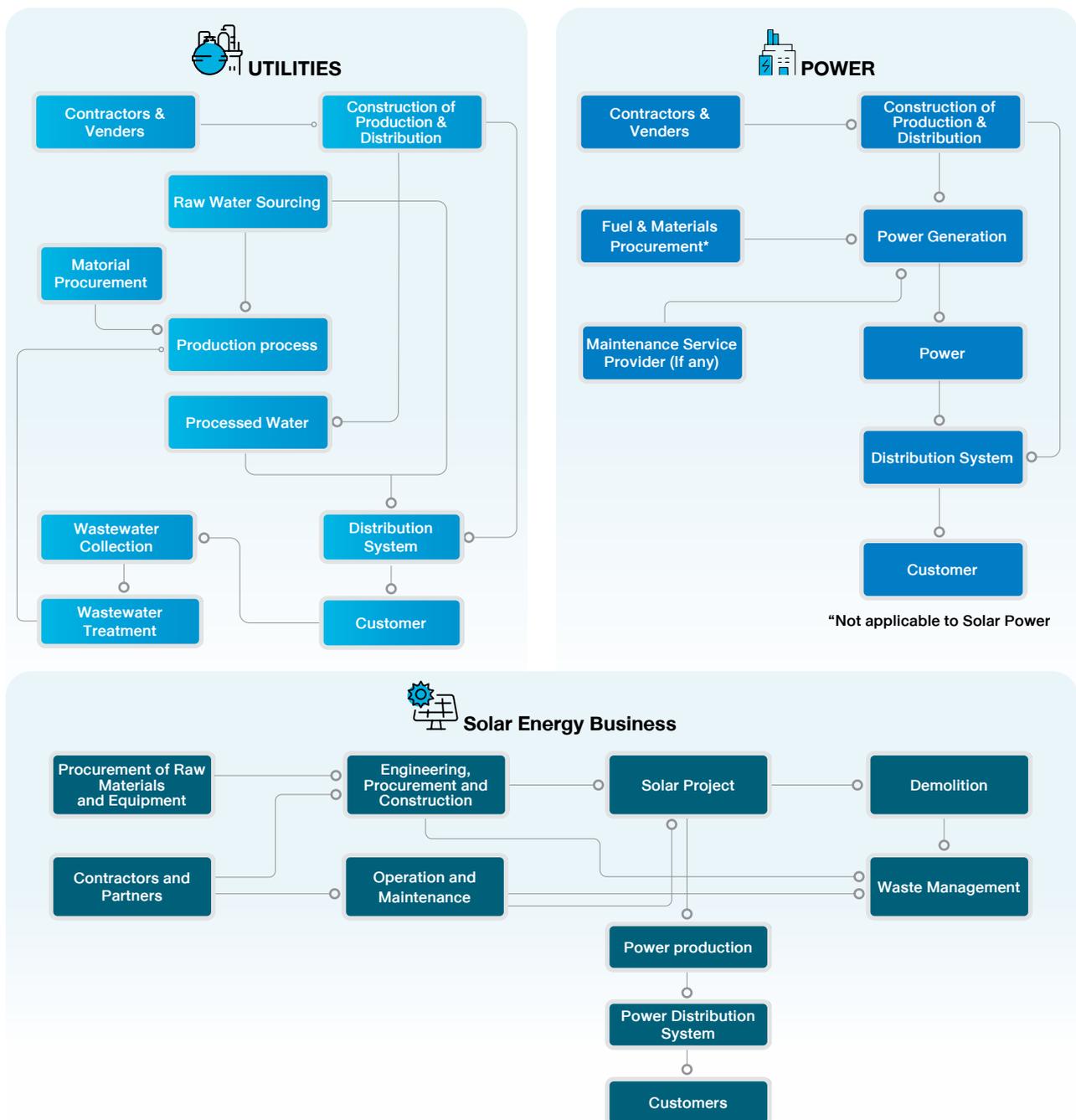


Note: For the functions under the corporation service e.g., Legal, Procurement, IT and HR the Company uses outsource service

WHAUP VALUE CHAIN

Business Group	Upstream	Business Activity	Downstream
Utilities Business 	<ul style="list-style-type: none"> Raw water procurement 	<ul style="list-style-type: none"> Water production Wastewater management 	<ul style="list-style-type: none"> Project maintenance After-sales customer service Management of operational waste
Power Business 	<ul style="list-style-type: none"> Purchasing fuel and Procurement of equipment for solar system installation. 	<ul style="list-style-type: none"> Power generation Solar rooftop installation 	

WHAUP VALUE CHAIN





SUSTAINABILITY AT WHAUP

WHA Utilities and Power Public Company Limited (WHAUP), a subsidiary of WHA Corporation Public Company Limited (WHA Group), has implemented a five-year Sustainability Framework beginning in 2020. The purpose is to facilitate the establishment of a framework that will steer the organization's development toward sustainability, all within the context of our commitment to being "The Ultimate Solution for Sustainable Growth".

To accomplish such a purpose, WHAUP has set a development framework based on good

corporate governance principles, human resources development, digital transformation, and natural resource conservation. The long-term corporate sustainability management objectives are linked to key sustainability challenges for the business and our stakeholders.

Additionally, WHAUP considers the outcomes of risk and opportunity analysis for various global situations and concerns that may happen in the future to guarantee that such development frameworks are effective and appropriate for the situations.



BUSINESS DIRECTION

“THE ULTIMATE SOLUTION FOR SUSTAINABLE GROWTH”

Corporate Value



NATURAL RESOURCES

- Commit to reducing the use of natural water resources by **25** million cubic meters per year by 2029, to support sustainable water conservation.
- Achieve zero waste to landfill and incineration without energy recovery by **2029**.
- Set a target to reduce greenhouse gas emissions (Scope 1 and Scope 2) by **42%** by **2030** using the 2021 baseline, in alignment with the Science-Based Targets Initiative (SBTi).
- Procure renewable energy capacity to meet **100%** of the energy demand (MW) for the water production plants by **2029**.
- Pledge to achieve No Gross Deforestation by 2030 and strive to create a net positive impact on biodiversity by **2050**.

Corporate Value



DIGITIZATION

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

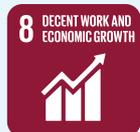
Corporate Value



HUMAN CAPITAL

- Maintain the Human Capital on Investment (HCROI) ratio of **16.3** by **2025**.
- Keep the overall employee turnover rate below **7.0%** by **2025**, and below **6.5%** by **2030**.
- Ensure the turnover rate of high-potential employees remains below 6% by 2025, and below 5% by **2030**.
- Achieve a Total Recordable Injury Frequency Rate (TRIFR) of less than **1.80** injuries per million working hours for employees and contractors

Corporate Value



GOVERNANCE

- Communicate the Company’s Code of Conduct internally and ensure that subsidiaries, employees, and partners/contractors are fully informed (**100%**) by **2025**, with an expansion to Vietnam by **2026**.
- Implement comprehensive risk management training for all levels of employees, achieving **100%** completion by 2025, and extending the training program to Vietnam by **2026**.
- Establish a customer satisfaction score target of **89%** or higher for **2025**.

Corporate Value



WHAUP recognizes the importance of sustainable business practices to create long-term value for all stakeholders. We are committed to operating under the principles of good corporate governance and integrating sustainability into strategies and operations at all levels. This ensures that partners and stakeholders are confident the Company is effectively managing sustainability and following its plans and set goals. WHAUP holds quarterly meetings to report on sustainability performance. In addition, WHAUP has established a Corporate Governance and Sustainable Development Committee, along with senior management, with clearly defined roles, responsibilities, and performance indicators to drive efficient sustainable business practices. The details are as follows:

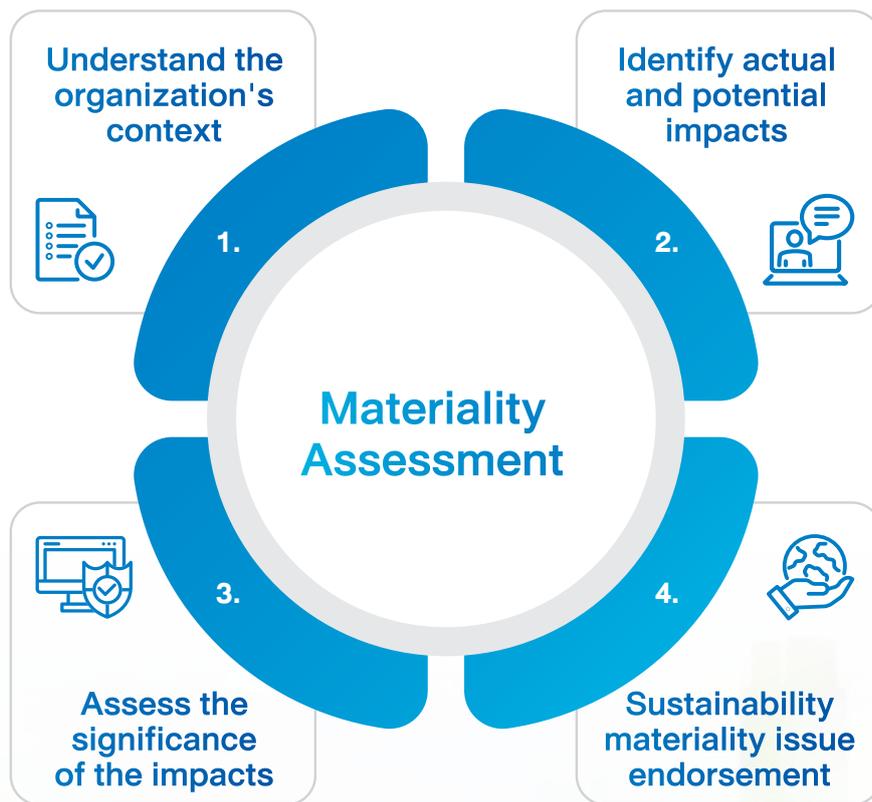
	Duties and Responsibilities	Performance Indicators
Board of Directors	<ul style="list-style-type: none"> Oversee the Company's operations to ensure strict compliance with applicable laws and regulations. Set Key Performance Indicators (KPIs) and evaluate performance outcomes. Review and monitor the management of significant ESG-related risks. Review and monitor the stakeholder engagement process and the materiality assessment process. 	<ul style="list-style-type: none"> Attendance Rate Board of Directors' Effectiveness Assessment Results
Corporate Governance and Sustainable Development Committee	<ul style="list-style-type: none"> Consider, review, and update policies related to activities concerning social and environmental responsibility, including ensuring the development of guidelines aligned with laws and international standards (which include but are not limited to environmental aspects, climate change mitigation, human rights, and occupational health and safety). This includes reviewing and updating these practices, documenting them as written guidelines for best practices. Consider, approve, review, and update the Company's materiality issues, as well as prepare a summary to report to the Board of Directors, evaluating the results of stakeholder analysis and key issues. 	<ul style="list-style-type: none"> Attendance Rate Organizational ESG performance
Chief Executive Officer	<ul style="list-style-type: none"> Conduct business in accordance with the Sustainable Development Policy and integrate ESG strategies into operational processes. Set key performance indicators (KPIs) and evaluate the performance of senior management. 	<ul style="list-style-type: none"> Proportion of significant ESG issues that are set as organizational goals. Proportion of ESG organizational goals set as performance indicators for senior management. Organizational sustainability performance or performance related to the environment, society, and governance.
Top Executive, Executives and Business Unit Department Head	<ul style="list-style-type: none"> Operate in accordance with the Company's Sustainable Development Policy. Monitor and evaluate the Company's sustainability operations. Drive operations to achieve the Company's sustainability targets. 	<ul style="list-style-type: none"> Sustainability performance of business units or the Company's performance in environmental, social, and governance matters.



SUSTAINABILITY MATERIALITY ISSUES

WHA conducts annual assessments and identification of material sustainability topics to ensure that the issues presented in the report align with the organization's operations, stakeholder expectations, and the current economic, social, and environmental context. This process adheres to the Double Materiality Principle, which considers both the impact of WHAUP's business activities on society and the environment, as well as the influence of sustainability issues on the organization's value, in accordance with international reporting standards (Global Reporting Initiative: GRI).

In 2024, the assessment process covered three key dimensions: Environmental, Social, and Governance (ESG). The materiality of each topic was evaluated based on its impact on stakeholders and WHAUP's operations. This approach enables WHAUP's to set directions, strategies, and risk management in response to global changes, while maintaining a balanced response to stakeholder expectations. The Board of Directors is responsible for reviewing, prioritizing, and approving the material sustainability topics and the content disclosed in this report.



MATERIALITY ASSESSMENT PROCESS

1. UNDERSTAND THE ORGANIZATION'S CONTEXT

WHAUP studies and analyzes data relevant to its operational context by considering global and industry-specific sustainability trends, as well as internationally recognized research and frameworks. In addition, WHAUP conducts in-depth interviews and collects input from both internal stakeholders, including employees and executives, and external stakeholders such as communities, business partners, and financial institutions. This process helps identify relevant sustainability trends and factors, both in the short and long term, across utilities and power business. The findings serve as a basis for screening and identifying issues that are relevant and impactful to the organization, society, the environment, and stakeholders.

2. IDENTIFY ACTUAL AND POTENTIAL IMPACTS

Based on the contextual understanding, WHAUP compiles a long-list of sustainability topics across the three ESG dimensions. The list includes only those topics that have caused or are expected to cause significant impacts on the environment, society, stakeholders, and WHAUP's operations. These topics are then assessed for their significance in the next step.

3. ASSESS THE SIGNIFICANCE OF THE IMPACTS

WHAUP organizes workshops with executives and relevant personnel from its four core business units to discuss and prioritize sustainability topics in accordance with the Double Materiality Principle. The assessment considers two main perspectives:

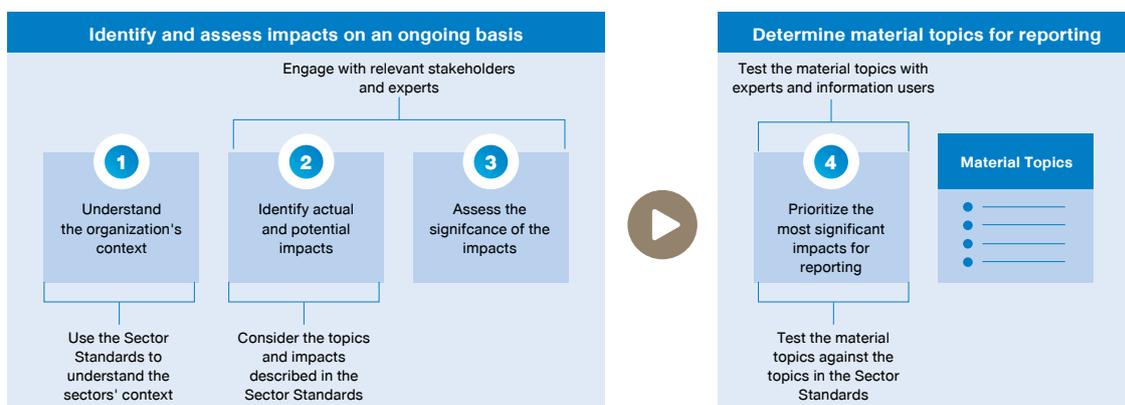
- **Impact to ESG:** Environmental and social impacts, including human rights and stakeholder impacts arising from WHAUP's operations.
- **Impact to Business:** The effect of sustainability issues on the organization's value.

The prioritization is based on two criteria: Severity of the impact and Likelihood of occurrence, taking into account the scale of the impact and the organization's ability to address or mitigate it.

The assessment results are prioritized, with topics that have the greatest impact on the environment and society (Impact to ESG) as well as the business (Impact to Business) selected as the short-list of material topics. These topics are then submitted to the Board of Directors for review and approval in the next step.

4. PRIORITIZE THE MOST SIGNIFICANT TOPICS AND VALIDATE THE RESULTS

The short-listed sustainability topics are presented to the Board of Directors for review and approval. These approved material topics guide WHAUP's sustainability strategy for 2024. The outcomes are integrated into WHAUP's Enterprise Risk Management Process and serve as the framework for disclosures in the 2024 Sustainability Report.



2024 SUSTAINABILITY MATERIAL ISSUES

Report Dimension	Sustainability Material Issues	Key Stakeholders and Impact Boundary		SDGs	Page
		Internal	External		
Governance/ Economic	Corporate Governance and Ethics	Employee	<ul style="list-style-type: none"> • Supplier/Creditor • Government/Regulator • Financial Institution • Customer • Media 		42-53
	Technology and Innovation	Employee	<ul style="list-style-type: none"> • Financial Institution • Shareholder/Investor • Media 	 	105-117
Social	Occupational Health and Safety	Employee	<ul style="list-style-type: none"> • Customer • Community • Supplier/Creditor 	  	165-181
	Community Development and Stakeholder Engagement	Employee	<ul style="list-style-type: none"> • Community 	 	182-225
Environment	Climate Strategy	Employee	<ul style="list-style-type: none"> • Customer • Supplier/Creditor • Government/Regulator • Community • Financial Institution • Shareholder/Investor 	   	257-276
	Energy Management	Employee	<ul style="list-style-type: none"> • Customer • Supplier/Creditor • Government/Regulator • Community • Financial Institution • Shareholder/Investor 	   	277-289
	Water Management	Employee	<ul style="list-style-type: none"> • Customer • Supplier/Creditor • Government/Regulator • Community 	  	301-316





STAKEHOLDER ENGAGEMENT

As a leader in the utilities and power business, WHA Utilities and Power Public Company Limited (WHAUP) is committed to creating value for communities and society, driving sustainable growth alongside the organization under the WHA Group’s vision of “WHA : WE SHAPE THE FUTURE.” In line with the mission to be “The Ultimate Solution for Sustainable Growth” for all stakeholders, WHAUP recognizes that stakeholder feedback is vital for sustainable development. Therefore, WHAUP focuses on building strong relationships, adhering to transparent operations, and engaging with stakeholders to understand and respond to their expectations and concerns through the development of integrated utilities and energy products and services.

Accordingly, WHAUP has collaborated with WHA Group to regularly review stakeholder engagement plans and develop approaches that encompass all aspects of WHAUP’s operations. This includes managing stakeholder expectations, analyzing and prioritizing stakeholder groups to identify their impact on WHAUP’s projects or operations from various perspectives. Moreover, the stakeholder engagement process enables WHAUP to effectively mitigate impacts, such as those related to the environment, livelihoods, as well as stakeholder health and safety. At the same time, it allows WHAUP to leverage positive issues to create maximum benefit and reinforce stakeholder confidence across the entire value chain.

MANAGEMENT APPROACH

1. Stakeholder management plays a crucial role in mitigating negative impacts and generating positive outcomes for society, which in turn benefits WHAUP’s business operations. WHAUP adheres to WHA Group’s stakeholder engagement management approach, which aims to effectively manage the expectations of each stakeholder group. This approach includes establishing appropriate engagement strategies tailored to each stakeholder group and ensuring comprehensive implementation across all WHAUP operational areas on a rotational basis.
2. WHAUP analyzes and prioritizes stakeholder groups to identify how each group impacts WHAUP projects or operations from various perspectives. The framework for stakeholder engagement management includes:
 - **Gathering:** Gathering both direct and indirect stakeholder groups to classify and prioritize the key stakeholders is important. WHAUP has established guidelines for stakeholder prioritization, considering two primary factors, impact and dependence. These factors are used to determine the importance and ranking of stakeholders who have significant relevance to WHAUP.
 - **Plan:** Plan and define strategies for engaging with stakeholders that are suitable for the identity of each group. This can involve activities such as meetings, survey design, communication through letters, conducting interviews during visits, and more. After that, assign responsible individuals and determine appropriate timeframes. Additionally, provide guidance on managing other risks that may occur during stakeholder engagement activities, such as addressing protests or unfavorable environmental conditions like rain or flooding, in order to keep WHAUP informed of stakeholder expectations and concerns regarding business management.
 - **Analyze:** Assess and analyze the issues, concerns, risks, and opportunities that stakeholders are interested in. This should be done based on risk management principles, evaluating the impacts and opportunities. This will help identify the necessity and prepare appropriate response processes.



- **Manage:** Monitor and implement actions according to the stakeholder engagement processes. This involves maintaining communication with all stakeholder groups, as well as responding to issues and addressing various problems following the complaint handling procedures.
- **Review and Improve:** Reviewing the effectiveness and efficiency of the stakeholder engagement activities and presenting them to the Corporate Governance and Sustainable Development Committee for their continuous acknowledgment at least every quarter. This includes communicating.

In addition, WHAUP holds monthly meetings of the Corporate Social Responsibility (CSR) Committee, which comprises senior executives and working teams involved with community engagement. These meetings serve as a platform for presenting suggestions or complaints related to community issues in order to jointly determine solutions and preventive measures, aiming to ensure that WHAUP can coexist with surrounding communities in a sustainable manner.

WHAUP has established a grievance mechanism for all stakeholder groups in order to identify issues and implement effective measures to address and resolve concerns. Both employees and external stakeholders are able to report problems, provide suggestions, or submit grievances through various channels. The Internal Audit Department is responsible for investigating and resolving these matters, and subsequently reporting them to the Audit Committee. The Committee compiles the issues and submits a report to the Board of Directors on a quarterly basis to assess the problems, formulate corrective

and remedial actions, and develop strategies to appropriately respond to stakeholder expectations and concerns. In addition, WHAUP reports the outcomes of these actions to relevant government agencies, such as the Environmental Monitoring Committee of the industrial estates, to ensure transparency and effectiveness in the process.

WHISTLEBLOWING CHANNEL

Channels for Employees:

Website: <https://www.wha-up.com/en/contact/whistle-blowing#contact-form>

Email: :

- Chief Executive Officer: CEO@wha-up.com
- The Audit Committee: auditcommittee@wha-up.com
- Suggestion Box: Human Resources Department

Channels for External Stakeholders:

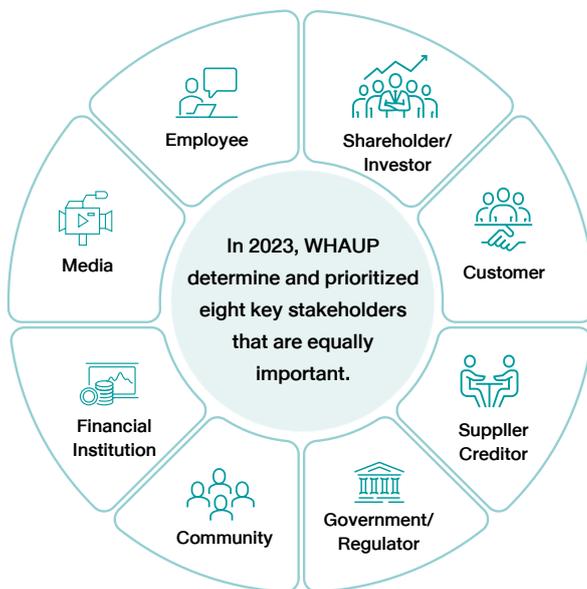
Website: <https://www.wha-up.com/en/contact/whistle-blowing#contact-form>

Email:

- Chief Executive Officer: CEO@wha-up.com
- The Audit Committee: auditcommittee@wha-up.com



In 2024, WHAUP determine and prioritized eight key stakeholders that are equally important including, employee, shareholder/investor, customer, supplier/ creditor, government/regulator, community, financial institution, and media.



THE STAKEHOLDER ENGAGEMENT REVIEW PROCESS

- Obtaining opinions, expectations, and concerns of stakeholders through various engagement methods and channels provided by WHAUP.
- Reporting concerns received from stakeholder engagement channels to the heads of relevant departments within WHAUP and the sustainable development committee, which consists of managers and personnel responsible from the relevant departments, to acknowledge, assess, and develop effective and appropriate response strategies to ensure that stakeholder expectations are met.
- Reporting the results of stakeholder engagement processes to management as important information for decision-making in business expansion and developing future stakeholder engagement strategies.



RESULTS FROM STAKEHOLDER ENGAGEMENT 2024

Stakeholder	Engagement Approach	Stakeholders' Expectation	2024 Performance Summary
Employee 	<ul style="list-style-type: none"> • Various all time communication channels (email, supervisor, intranet etc.) • Communication channels through WHA Connect • Annual CEO Town Hall • Quarterly Executive Sharing • Annual employee satisfaction and engagement survey • Suggestion box • Whistle blowing channel • Monthly management meeting • Organizing operational workshops to gather feedback on sustainability issues from all stakeholders. 	<ul style="list-style-type: none"> • WHAUP outlook • Business trends and updates • Update on news and knowledge sharing • Training and career development program • Work environment • Compensation, welfare, and benefits • Management of occupational health and safety • Business continuity plan • Progress in career path • Receiving equal treatment without discrimination • Flexible working 	<ul style="list-style-type: none"> • Update the performance and business outlook • Share business trends and updates via WHA's communication channels • Develop and improve training programs to enhance the skills of employees, including both general and specific skills, for both new and current employees. • Develop and provide suitable training programs regularly • Communicate on corporate values and strategy • Regularly review and improve employees' compensation and benefits • Promote good occupational health and safety culture • Update and communicate business continuity plan via various communication channels in a timely manner • Conduct business continuity plan rehearsals to ensure practices and requirements are strictly and effectively followed • Establishing a Nomination Remuneration and Compensation Committee (NRC) to oversee the appointment of executive-level employees based on qualifications, skills, and abilities, without any restrictions or discrimination based on gender, age, skin color, race, nationality, or cultural background. • Assigning tasks to individuals who possess suitable qualifications and capabilities
Shareholder/ investor 	<ul style="list-style-type: none"> • Annual general meeting • Annual Report and Sustainability Report • Roadshow • Analyst meeting • Outlook meeting • Investor site visit • Opportunity Day • Various all time communication channels (e.g. telephone, email, website etc.) • Whistleblowing channel 	<ul style="list-style-type: none"> • Business performance, such as returns, benefits and profits • Business transparency • Changes in business management and risk management • Sustainability performance • Sustainable growth and expansion of the business with safe working systems and standards in place, ensuring continuous management to operate the business without interruptions. • Effective risk management in response to rapid changes in global climate conditions. • Equal treatment and practices among shareholders 	<ul style="list-style-type: none"> • Improve business competitiveness and business directions to be up-to-date • Ensure good corporate governance • Establishing processes for identifying, assessing, and controlling operational risks, capital risks, and profit risks of the company, both existing and emerging risks. And developing emergency response plans and procedures to ensure business continuity in the event of unforeseen circumstances. • Take part in Thai Private Sector Collective Action Against Corruption (CAC) • Conduct enterprise risk management and establish short and long-term plan • Provide information on flooding risk prevention • Manage sustainability material topics • Ensure environment and social compliance • Promote innovation and sustainability initiatives • Manage and meet the needs of stakeholders equally, without any discrimination

Stakeholder	Engagement Approach	Stakeholders' Expectation	2024 Performance Summary
Customer 	<ul style="list-style-type: none"> Roadshow/ marketing events/ webinar Quarterly business meeting/ video conference Annual customer satisfaction survey Quarterly customer clubs Quarterly WHA Connect magazines Various all time communication channels (i.e. telephone, email, key contact personnel, social media etc.) WAHSapp Company visits, including virtual tours of industrial estates through a 360° virtual tour system Whistleblowing channel 	<ul style="list-style-type: none"> Product and service inquiry Quality of after sale services Environment management, compliance and standards Risk and crisis management Efficient energy management (cost reduction) Effective waste management practices Presenting innovative and environmentally responsive products that address environmental challenges Avoiding environmental issues with neighboring communities Ensuring good corporate governance and business ethics to promote a positive image for customers. 	<ul style="list-style-type: none"> Provide product and service information on website and other media Provide prompt response to customers' inquiry Establish effective customer relationship management Continuously improve customer relationship management from customer's comments / suggestions Strictly comply with related laws and regulations and apply international environmental management standards where possible to improve customer trust Conduct risk and crisis assessment and implement appropriate mitigation actions Inform customers of relevant risks and crisis management plans and measures Utilizing new technologies and innovations for environmental management Planning energy usage and implementing energy storage for future use Reducing the quantity of materials used and waste generated in production processes ISO 14001 standard to ensure that business operations have no adverse impact on the environment and communities. Developing technology to enhance customer convenience, such as the 360° virtual tour system, LBMS application, and vehicle data management system.
Supplier/ creditor 	<ul style="list-style-type: none"> Supplier event Supplier site visit Telephone Email Self-evaluation and onsite visits Whistleblowing channel 	<ul style="list-style-type: none"> Transparency in procurement process Business opportunities and collaboration Compliance with WHAUP's standard On-time payment and following the contract agreement Environment, social and governance management Material quality and its environmental impacts Labor conditions (i.e. human rights) Workplace's occupational health & safety 	<ul style="list-style-type: none"> Developed procurement policy and procedure Conduct Suppliers-day Communicate on WHAUP's procurement policy Conduct supplier assessment and provide feedback/ corrective action plans to guide suppliers for improvement Follow the contract agreement Disclose information according to the agreed condition Communicate concerns related to environment, social and governance criteria Evaluate supplier criteria to ensure that environmental, social and governance concerns are in line with standards Ensure environmental management compliance are strictly followed Develop screening process to ensure that it complies with the Supplier Code of Conduct Assessing human rights risks and ensuring compliance to prevent violations of labor rights or human rights issues. Supporting the Building Social Impact Initiatives (BSI) task force to create a safe environment, access to health care, education, and protection for children and families living in construction worker camps

Stakeholder	Engagement Approach	Stakeholders' Expectation	2024 Performance Summary
Government/ regulator 	<ul style="list-style-type: none"> Meeting on occasion Various all time communication channels (i.e. telephone, email) 	<ul style="list-style-type: none"> Conducting business in compliance with laws and regulations Stakeholder impact management Corporate governance and transparency Conducting business with integrity, awareness, and implementation by all employees at all levels of the organization Serving as a role model organization for other organizations Conducting business without creating negative environmental impacts 	<ul style="list-style-type: none"> Strictly comply with relevant laws and regulations Managing the needs of stakeholders, including ensuring ethical business practices, in order to instill confidence in stakeholders. Corporate governance and transparency Ensure good corporate governance and implementation of business code of conduct Environmental, Social, and Governance (ESG) risk management. Emphasizing long-term financial planning and organizational flexibility.
Community 	<ul style="list-style-type: none"> Public hearing and meeting Community activities Community engagement survey Local community representatives Site visits Whistleblowing channel 	<ul style="list-style-type: none"> Business operations' impacts on communities' well-being (i.e. traffic, safety, water shortage, air pollution, wastewater, waste, etc.) Environmental management performance Developing communities and promoting community activities (i.e. education promotion, health promotion, and community enterprise promotion) Community engagement Ensuring that business operations do not impact the geographical conditions of communities and their way of life. 	<ul style="list-style-type: none"> Conduct regular community feedback survey to ensure there is no impact on local community Implement mitigating actions where business operation activities affect community's well-being (i.e. use of vehicle management system to improve traffic problem) Involve surrounding communities in crisis management and emergency drill Ensure compliance with environmental related laws and standards Regularly implement community development project (e.g., as collaborating with educational institutions to develop youth skills aligned with labor market demands and promoting health and medical equipment support to local hospitals and healthcare facilities) Share WHAUP's expertise with local communities Provide effective and prompt response to community complaints Conduct community meeting to understand communities' needs and suggestions Conduct public consultations and report on the results of Environmental Impact Assessments (EIA) to gather feedback and develop preventive and control measures. Support the local economy by fostering community engagement and preserving cultural traditions and customs (e.g., promoting community products through the WHA Pan Kan project).

Stakeholder	Engagement Approach	Stakeholders' Expectation	2024 Performance Summary
Financial Institution 	<ul style="list-style-type: none"> • Various all-time communication channels (i.e. email, phone, conference, etc.) • Annual greetings • Quarterly analyst meetings 	<ul style="list-style-type: none"> • Business performance and outlook • Compliance with the law • Business transparency • Changes in business management and risk management • Sustainability performance • Green initiative • Continuous business operations 	<ul style="list-style-type: none"> • Improve and keep business competitiveness and business directions up-to-date • Ensure good corporate governance • Strictly comply with Disclosure Policy • Notify significant updates or changes in a timely manner • Manage sustainability material topics • Promote innovation and sustainability initiatives • Assess sustainability issues along with investment decision process • Investing in environmentally friendly projects. • Seeking funding opportunities that prioritize green issues and related aspects • Implementing Business Continuity Planning (BCP) to ensure preparedness for crises
Media 	<ul style="list-style-type: none"> • Various weekly or bi-weekly communication channels (i.e. press release, photo captions, executive interview and news article) • Annual press conference, press tour/visits and annual greetings • Quarterly Group interviews • Bi-annual press briefings 	<ul style="list-style-type: none"> • Business outlook/ Business direction • Strengthening relationships • Updates on products and services • CSR initiatives and environmental management • Business outlook • Financial results • Technological advancements 	<ul style="list-style-type: none"> • Hold annual press conference to update business plan and directions • Frequently update on the development of company's activities through media channels • Disclose accurate and real information • Maintain good and long-term relationships with the media





01

CORPORATE GOVERNANCE / ECONOMIC DIMENSION





CODE OF CONDUCT

1. Global Trend

In an era where businesses face multifaceted challenges, including market competition, societal expectations for transparent and ethical operations, and volatile economic factors that are difficult to predict, adherence to business ethics is crucial for an organization's sustainability. Especially in 2024, business ethics trends are adapting to a rapidly changing environment, encompassing technological advancements, the growth of the digital economy, and responses to environmental and social issues. Organizations are increasingly prioritizing the deeper integration of ethics into their corporate culture to foster trust, transparency, and demonstrate social and environmental responsibility through sustainable operational guidelines. Furthermore, they are linking Environmental, Social, and Governance (ESG) principles with their business strategies to ensure long-term stability.

Moreover, leveraging technology and innovation, such as AI and data analytics, in business decision-making processes helps strengthen ethical decision-making, reduce risks of non-compliance, and support diverse perspectives in board-level decisions. This leads to more prudent and efficient decision-making. The adaptation of organizations amidst economic fluctuations, such as inflation or supply chain uncertainties, reflects the necessity of bolstering economic stability and sustainably meeting society expectations in the future.

2. Our Position

WHAUP believes that transparency and integrity are fundamental to building trust among the organization and all stakeholders, including employees, customers, investors, and suppliers. To achieve this, we have established a clear and comprehensive Code of Conduct to guide personnel in making ethical and legally compliant decisions and actions. This also

promotes a corporate culture committed to long-term social and environmental responsibility. As a socially and economically responsible organization, WHAUP is dedicated to strictly adhering to the Code of Conduct for both WHAUP and the WHA Group. This commitment aims to prevent risks that could impact the organization's reputation and credibility due to breaches of ethical principles and regulations. This Code of Conduct assures stakeholders that the organization operates with honesty and transparency, serving as a vital mechanism for driving sustainable business operations. We continuously review and update our Code of Conduct to align with changing environments and meet stakeholder expectations in all dimensions, striving to elevate operational standards in line with Environmental, Social, and Governance (ESG) guidelines to foster long-term sustainability.

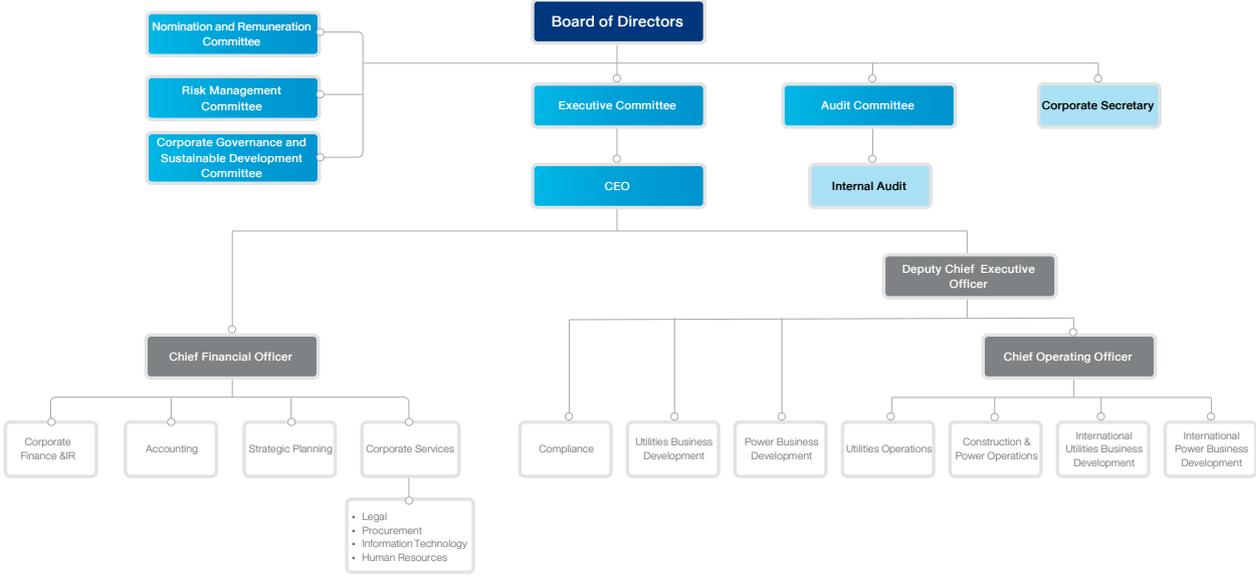
3. MANAGEMENT APPROACH

3.1 ORGANIZATIONAL STRUCTURE ALIGNED WITH GOOD CORPORATE GOVERNANCE FRAMEWORK

WHAUP recognizes that operating with transparency is a key factor that directly contributes to an organization's credibility and long-term success as stakeholders, including customers, suppliers, and investors, value business responsibility and ethics in order to trust WHAUP. Transparency also plays a crucial role in mitigating governance-related risks, enabling the organization to adapt and respond effectively to changes in the business environment. It also serves as a foundation for strengthening the organization's long-term sustainability development, stability, and competitiveness. WHAUP, as part of WHA Group and a comprehensive utilities and power service provider, emphasizes transparent and concrete corporate management practices. These practices are aligned with applicable laws, the good corporate governance

principles set by the Securities and Exchange Commission (SEC) and the Stock Exchange of Thailand (SET). Additionally, WHAUP follows the OECD Principles of Corporate Governance, aligned WHA Group’s operational practices.

WHAUP provides opportunities for the Board of Directors, all executives and employees to participate freely in the development and driving of the organization under a framework of good governance. We focus on practices that promotes diversity among personnel, including directors, executives, and employees. Furthermore, roles and responsibilities between the Board of Directors and the executives are clearly defined and balanced. The corporate governance structure includes the Board of Directors, sub-committees, and management teams as follows:



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

BOARD OF DIRECTORS

The Board of Directors plays a crucial role as leaders within the organization, whether it is in setting the vision, mission, strategic plans, and budgets for the management teams to implement in line with WHA Group. This aims to achieve business objectives, or in overseeing the management teams’ operations to ensure they align with the policies assigned, with fairness, transparency, and compliance with laws, regulations, and WHAUP policies, including the Code of Conduct.

Therefore, the Board of Directors is appointed by the shareholders through a transparent process. Each director possesses knowledge, expertise, and diverse relevant experiences, aligned with the organization’s strategies and sustainable business goals. Additionally, the Board of Directors must devote sufficient time to their duties, exhibit leadership, have a vision, be independent in decision-making, and be able

to oversee and foster confidence in stakeholders that WHAUP’s business operations and activities are conducted correctly by law and ethically. The Board of Directors is independent from the management teams through a clear division of responsibilities between the Board of Directors and the management.

Aside from their business expertise, all directors have another key characteristic which is their carefulness and vision for sustainable business operations. This includes planning, policy-setting, and overseeing operations to align with a sustainable development framework (Environmental, Social, and Governance: ESG). The Board oversees business with consideration for our impact on society and the environment, respect rights, and hold responsibility towards shareholders and all stakeholders. They also conduct the business with regard for the benefit of the community and society.

CORPORATE GOVERNANCE AND SUSTAINABLE DEVELOPMENT COMMITTEE

The Board of Directors has assigned the Corporate Governance and Sustainable Development Committee the responsibility to oversee, communicate and implement corporate governance and sustainable development activities with management to monitor progress, review, and improve the corporate governance practices of relevant employees, including business partners, to comply with the established policies. The Corporate Governance and Sustainable Development Committee will monitor and report the progress of high-level management and the development team on sustainable development according to the established plan. The committee will organize at least two meetings of the Corporate Governance and Sustainable Development Committee to monitor progress and evaluate the results (Due Diligence) in sustainable operations. Additionally, WHAUP and WHA Group has appointed an Environmental Committee consisting of senior management and relevant employees from various departments to work on environmental quality management, energy conservation, and biodiversity conservation in WHAUP's operations.

The Corporate Governance and Sustainable Development Committee plays a vital role in overseeing compliance with principles and laws related to transparent business operations to ensure a balance of power. Additionally, it is responsible for considering, reviewing, and improving corporate governance policies to align with the business environment and to setting operational guidelines for the organization. Additionally, the Corporate Governance and Sustainability Development Committee plays a key role in supervising environmental, social, and governance (ESG) matters and sustainability efforts. This ensures that all WHAUP's business activities are conducted in accordance with the Code of Conduct and relevant ESG-related policies, supporting sustainable operations and accountability to all stakeholders. Furthermore, WHAUP has assigned the Risk Management Committee to oversee ESG-related risks. Further details are provided in the Risk Management section.

The Corporate Governance and Sustainable Development Committee also acts as a representative in overseeing, communicating, and setting policies relate to corporate

governance and sustainability activities. This includes engagement with executives, employees, internal departments, and relevant external parties. The Committee ensures that the sustainable development practices aligned with laws and international standards, including but not limited to environmental issues, climate change, human rights, and occupational health and safety. The Committee is also responsible for overseeing the management of potential economic, environmental, and social impacts, as well as WHAUP's materiality issues consideration. The Committee also addresses other key issues that may affect WHAUP and related parties, covering all employees and executives in the organization to ensure transparent and sustainable business operations.

Executives and the Sustainable Development Working Team regularly reports progress on sustainable development to the Corporate Governance and Sustainable Development Committee for endorsement. This report includes comments and suggestions to improve sustainable development operations such as updates on materiality issues, anti-corruption efforts, environmental and social initiatives, and responses to climate change, etc. In 2024, the Sustainable Development Working Team regularly reported progress to the Committee totaling 2 times, with all Committee members present in both meetings (100% attendance rate), meeting the defined target. The Committee subsequently reports this progress to the Board of Directors on a regular basis. Additionally, the Corporate Governance and Sustainable Development Committee reviewed and approved the Materiality Issues in the meeting 1/2024 which held on February 2, 2024.

NOMINATION AND REMUNERATION COMMITTEE

When presenting and selecting candidates for appointment to the Board of Directors, WHAUP considers the perspectives of stakeholders towards the nominees. The selection and nomination process are free from interference and conflicts of interest, with the focus on the abilities and qualifications of the candidates. WHAUP's Board has established a Nomination and Remuneration Committee (NRC) to be responsible for proposing qualified individuals based on their skills, abilities and relevant experience that align with and support the business strategy,

without discrimination based on gender, age, race, ethnicity, nationality, or cultural background, to serve as directors and senior executives. In addition to its role in selecting and nominating Board members, the NRC is responsible for proposing criteria and guidelines for determining the compensation of the Board, senior managements, and all employees. The criteria are clear, fair, appropriate, and consistent with labor market conditions, the nature of the business, and the industry. The Committee meets at least four times a year and reports its findings to the Board of Directors for approval.

The information regarding the selection, appointment, and composition of the Board of Directors and senior executives is detailed in the “Corporate Governance” and “Corporate Governance Structure” sections in Form 56-1 One Report 2024.

AUDIT COMMITTEE

WHAUP recognizes the importance of good corporate governance as a critical factor in enhancing operational efficiency and driving sustainable growth, ultimately benefiting all stakeholders. To ensure that governance is conducted effectively and transparently, the Board of Directors has appointed the Audit Committee, which is responsible for independently overseeing and reviewing WHAUP’s operations. All members of the Audit Committee are able to exercise impartial judgment and have a sound understanding of financial statements, which is essential for fulfilling their responsibilities.

Currently, the Audit Committee comprises 3 independent directors. Among them, two are accounting expertise and one is a direct financial expertise. The composition of the Audit Committee complies with the requirements of the Capital Market Supervisory Board and the Stock Exchange of Thailand to ensure that the auditing process meets international standards and fosters trust among shareholders and all stakeholders.

Additional information on the Audit Committee is available under the sections “Corporate Governance,” “Corporate Governance Structure,” “Audit Committee Charter,” and “Profile of Directors” in the Form 56-1 One Report 2024.

THE PERFORMANCE EVALUATION OF THE BOARD OF DIRECTORS

WHAUP has established a process for evaluating the performance of the Board of Directors and our sub-committees, both through individual self-assessment and collective evaluation, to review and enhance their work, address issues, and overcome challenges on an annual basis. Additionally, the Board evaluates the performance of the WHAUP CEO, the top executive, annually. The evaluation focuses on leadership, strategy formulation and implementation, environmental, social, and governance (ESG) practices, financial planning and performance, relationship with the Board and external organizations, management and employee relations, succession planning, product and service knowledge, and personal attributes. The results of assessment are used to determine the compensation of WHAUP CEO.



WHAUP has as a policy to promote and support the continuous development of knowledge, skills, and experiences of the Board of Directors for sustainable development. This includes training and seminars on topics of interest both inside and outside the organization, such as training courses organized by Thai Institute of Directors (IOD), and encourages the Board to visit relevant business group both domestically and internationally.

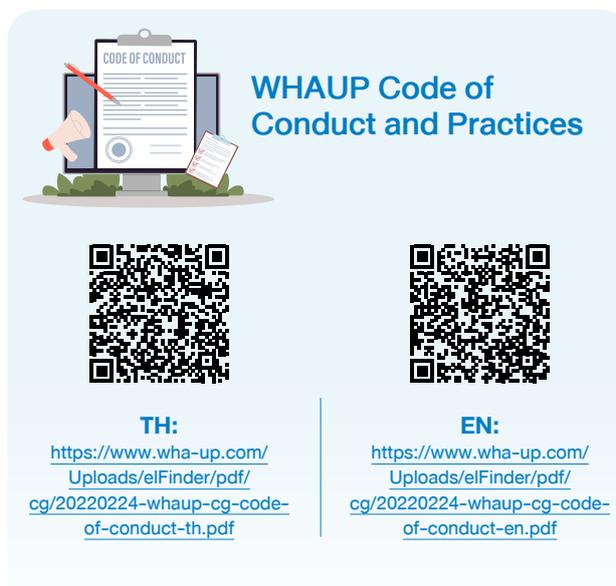
Additional information on the evaluation of the Board's performance in 2024, the evaluation of WHAUP CEO's performance, and the development of knowledge through training courses can be found under the "Corporate Governance" section in the Form 56-1 One Report 2024.

THE CODE OF CONDUCT AND PRACTICES OF WHAUP ("CODE OF CONDUCT")

WHAUP places great importance on and is committed to adhering to the law, especially laws related to the management of utilities and power, which are enforced in all countries where we operate. WHAUP aims to ensure that our directors, executives, and all employees respect and comply with laws, as well as local customs, traditions, and cultures. Additionally, WHAUP respects human rights and international standards, staunchly opposes all forms of corruption, and strictly adheres to anti-corruption policies and guidelines. WHAUP has established risk management and auditing processes and encourages corporate culture that is committed to honesty, integrity, and fairness. This commitment is emphasized from the Board of Directors and executives to all employees through the implementation of good corporate governance practices by the Securities and Exchange Commission, the Stock Exchange of Thailand, and international standards, such as the United Nations Global Compact. This is reflected in the establishment of WHAUP's Corporate Governance Policy and Code of Conduct.

WHAUP has established a Code of Conduct, which has been endorsed by the Corporate Governance and Sustainable Development Committee. The Code of Conduct aligns with WHA Group's Code of

Conduct. The primary objective is to foster business practices, honesty, legal principles, ethics, and a sense of responsibility towards Environmental, Social, and Governance (ESG). These principles encompass not only the directors, executives, employees, but also extend to suppliers, contractors, subsidiaries, and associated companies under WHA's management controls. The Code of Conduct has been prepared in both Thai and English to ensure that stakeholders, both domestic and international, can study, comprehend, and effectively implement it. Furthermore, the Code of Conduct undergoes an annual review in 2024 to ensure its relevance and alignment with the prevailing social context. WHAUP has disclosed the Code of Conduct publicly available through WHAUP's website and intranet, to facilitate easy access to this vital information for employees and external stakeholders.



The graphic features a central illustration of a computer monitor displaying a document titled "CODE OF CONDUCT" with a red pen resting on it. To the right of the monitor, the text "WHAUP Code of Conduct and Practices" is written in blue. Below the illustration are two QR codes. Under the left QR code, the text "TH:" is followed by the URL <https://www.wha-up.com/Uploads/elFinder/pdf/cg/20220224-whaup-cg-code-of-conduct-th.pdf>. Under the right QR code, the text "EN:" is followed by the URL <https://www.wha-up.com/Uploads/elFinder/pdf/cg/20220224-whaup-cg-code-of-conduct-en.pdf>.

The Code of Conduct and Practices of WHAUP is applicable to all personnel in all levels. WHAUP has introduced a digital acknowledgment process to ensure adherence to the Code of Conduct. Furthermore, comprehensive training programs are offered to effectively communicate these policies to employees, suppliers, contractors, subsidiaries, and joint ventures, ensuring their acknowledgment.

Moreover, WHAUP's employee performance appraisal system also considers compliance to the Code of Conduct to ensure that WHAUP's personnel, especially employees, strictly adhere to this Code of Conduct.

REVIEW AND COMPLIANCE WITH THE CODE OF CONDUCT

WHAUP regularly reviews compliance with the organization's Code of Conduct to identify any cases of non-compliance and to promptly implement corrective actions. The Board of Directors, based on recommendations from the Corporate Governance and Sustainable Development Committee and relevant departments such as Compliance Department, continuously assesses the effectiveness of the Code of Conduct to ensure its proper enforcement and evaluation in strict accordance with ethical standards and related regulations. This review process also ensures that the organization operates transparently and maintains accountability to all stakeholders. In 2024, no complaints or violations related to non-compliance with the Code of Conduct were reported.

POLICY ON REMUNERATION

WHAUP has implemented a Remuneration Policy for Directors and Top Executives that is tied to their performance in managing the organization's impact on the Environment, Social, and Governance (ESG). This policy aims to incentivize senior management to prioritize and actively address these impacts covering all 3 dimensions.

More information on the composition, roles, and responsibilities of the Board of Directors and sub-committees, attendance ratio, remuneration for directors and top executives appear in the topic "Corporate Governance Structure" in Form 56-1 One Report 2024.

The process and steps for considering compensation policies are overseen by the Nomination and Remuneration Committee, which comprises independent directors. This committee plays a crucial role in reviewing and improving the compensation policies and structures for the Board of Directors, sub-committees, and senior executives to align them with the current labor market conditions. They also compare them with other companies in the same industry. The Nomination and Remuneration Committee can independently perform its duties through a comprehensive and appropriate compensation review and analysis process, considering the opinions of stakeholders (including shareholders)

without any conflicts of interest. The remuneration of the directors is then reviewed by the Board of Directors for submission to the shareholders' meeting for approval. Further details can be found in Form 56-1 One Report 2024.

ANTI-CORRUPTION POLICY

WHAUP aims to ensure that all relevant personnel have the knowledge, understanding, and a strong emphasis on combating all forms of corruption, as well as being aware of their duties and responsibilities and can effectively apply practices related to anti-corruption. Therefore, WHAUP has established the "Anti-Corruption Policy and Practices" which undergo regular reviews to ensure relevance and effectiveness. This policy is applicable to all WHAUP personnel, including directors, executives, employees, suppliers, distributors, contractors, subsidiaries, and joint ventures. Its primary objective is to prevent the abuse of power, fraudulent activities, bribery, and to ensure that all business operations are conducted in full compliance with the law. Detailed guidelines pertaining to these principles are outlined within the Code of Conduct and Practices, Supplier Code of Conduct, and the Anti-Corruption Policy and Practices.

The Board of Directors has assigned the Audit Committee with the responsibility of overseeing and examining operations in compliance with the Anti-Corruption Policy and Practices. This includes the review of the policy itself and the assessment of the internal control system concerning anti-corruption measures. The Audit Committee is responsible for monitoring and mitigation of the risk of illicit activities and fraudulent behavior, prevention of fraud and corruption within the organization, as well as handling of complaints and reports of corruption from relevant parties. The Internal Audit Department conducts risk assessments related to corruption to identify and implement measures for risk reduction. This scope extends to external stakeholders, as well as business interactions with customers and significant business partners. WHAUP has established written Anti-Corruption Policy and Practices, including guidelines for acceptable and unacceptable practices, to avoid the risks of corruption. Examples include:

- Policies on giving and receiving gifts
- Policies on charitable donations, giving, and/or receiving support
- Hospitality practices
- Political contribution practices
- Procurement practices
- Guidelines for hiring government employees

As in previous years, in 2024, WHAUP has continued to uphold our No Gift Policy and communicated it to all relevant stakeholders, both internal and external, including directors, executives, employees, subsidiaries, joint ventures, suppliers, and business partners under the No Gift Policy Program. This initiative aims to promote governance principles and establish a standard of transparency in the working culture across all departments. All personnel are required to strictly adhere to this policy. In 2024, no cases of employee fraud or corruption were reported.

Anti-Corruption Policy and Practices		No Gift Policy	
			
			
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WHAUP’s Anti-Corruption Policy and Practices is aligned with WHA Group, which clearly defines practices to avoid the risk of fraud and corruption. This includes the guideline for the giving or receiving of gifts, charitable contribution, sponsorship, hospitality, political contribution, procurement procedures, and the revolving door, and other practices beyond the scope of the Code of Conduct. WHAUP has announced disciplinary actions in case of violations or non-compliance, from minor to serious offenses, including bribery, fraud, unauthorized disclosure of WHAUP’s confidential information or intellectual property, or any actions that significantly affect WHAUP’s reputation.

3.2 RISK AND OPPORTUNITIES MANAGEMENT STRATEGY

Good corporate governance serves as a crucial foundation, empowering an organization to cultivate both credibility and a favorable reputation among stakeholders, including investors, customers,

employees, and business partners. Conducting operations based on governance principles ensures transparency in processes, draws investment from both local and international sources, fosters long-term stakeholder confidence, and minimizes risks related to corruption or procedural mistakes. In addition, compliance with international standards and relevant regulations enhances WHAUP’s competitiveness in the global market, enabling customer base expansion, greater business opportunities, and a stronger position within the industry.

However, good corporate governance can come with several challenges. These include the need to allocating human resources, investing in technology, and the time required to design and implement effective governance systems. While these investments yield positive long-term results, they may increase short-term operational costs and impact business agility. Additionally, if an organization does not define clear measures or guidelines, issues can arise

concerning transparency, stakeholder communication, or complex reputational and legal risks. Therefore, WHAUP must meticulously plan their operations to balance stringent governance measures with flexibility in management. This approach enables us to generate positive and sustainable outcomes, both in terms of business and in meeting stakeholder expectations over the long term.

3.3 RISK MANAGEMENT

WHAUP emphasizes defining comprehensive enterprise risk management strategies. This involves analyzing and assessing potential risks and opportunities, alongside monitoring key future trends. This approach helps the organization prioritize risks and develop effective risk management plans. Furthermore, systematic risk management opens new business opportunities and promotes our long-term stability and sustainability. Governance risk management is also crucial for building confidence and trust among all stakeholders, including employees, customers, investors, and business partners. Therefore, WHAUP is dedicated to developing our governance strategies by establishing clear policies, fostering a strong corporate culture, and integrating ESG principles into our operations. This ensures that the business grows responsibly,

transparently, and with a strong commitment to business ethics.

PROMOTING BUSINESS ETHICS AND GOOD PRACTICES WITHIN THE ORGANIZATION

Furthermore, WHAUP has announced and communicated our anti-corruption policies, including disciplinary actions in case of breaches, to all employees. Every employee has signed to acknowledge and comply with these policies as part of WHAUP’s work regulations. We provide internal communication system to continuously convey the Code of Conduct, anti-corruption measures, and No Gift Policy to employees at all levels. Regular training is provided to review and enhance employees’ understanding and knowledge of the Anti-corruption Policy and Practices every year. Compliance with the Code of Conduct, as well as participation in business ethics training, are considered during the annual employee performance evaluation.

For directors, WHA Group provides orientation training for new directors to communicate the anti-corruption policy and conducts regular annual refresher training. In 2024, 100% of the Board of Directors reviewed and received full communication of the company’s anti-corruption policy.

Training Course	Content	Result
Code of Conduct & Anti-Corruption	WHAUP and WHA Group hosted “Code of Conduct and Anti-Corruption” training course on October 16, 2024, to review knowledge for directors, executives, and all employees. The training content covered key topics such as prevention of insider trading, securities holding reporting, conflict of interest prevention, related party disclosures, and whistleblowing and complaint channels. In 2024, the training format was developed into video animation and e-learning modules to make learning more accessible and easier to understand.	In 2024, 100% of employees acknowledged and understood the Code of Conduct and Practices and Anti-Corruption Policy and Practices. Moreover, there were no violations of the Code of Conduct and Practices, no cases of corruption, and no whistleblowing or complaints related to these issues.
New Director Orientation and Annual Anti-Corruption Policy Refresher	WHAUP organized orientation training for new directors to communicate the anti-corruption policy. Annual refresher training was also provided to the entire Board of Directors, covering operational guidelines and requirements of the anti-corruption policy to promote effective performance under good governance principles.	In 2024, 100% of the Board of Directors completed the anti-corruption policy refresher training and received relevant communications regarding the policy.

WHISTLEBLOWING

Whistleblowing is the process by which individuals within an organization or other stakeholders who have information or suspicions about legal violations, misconduct, or corruption within the organization decide to report that information to the relevant group for appropriate action or legal compliance. Whistleblowing is important for promoting transparency, honesty, and preventing corruption in various aspects of an organization and society. It is a way to help identify and address problems promptly. Additionally, there are laws that protect and support whistleblowers. In order to enhance our oversight and anti-corruption efforts, WHAUP has established a dedicated whistleblowing or complaint channel. This channel enables employees and internal and external stakeholders, including suppliers, contractors, business partners, joint ventures, communities, and other relevant parties, to easily report suspected cases, provide leads, or make suggestions or complaints regarding misconduct, corruption, violations of laws and regulations, Corporate Governance Policy, the Code of Conduct, and the Anti-Corruption Policy, as well as other suggestions for business operations. To build trust of whistleblowers, our policy prohibits any form of demotion, punishment, or retaliation against

employees who report fraud and corruption, even if it means potentially losing business opportunities. Additionally, all parties involved in receiving whistleblowing information are obliged to maintain strict confidentiality and refrain from disclosing it to others, unless mandated by legal obligations, administrative orders, or court directives.

In the event of whistleblowing or complaints, the Internal Audit department will gather information and conducts a preliminary assessment. Subsequently, the findings are reported to the management for further consideration and then reported to the Audit Committee and the Board of Directors. Whenever there are any clues or complaints, the Internal Audit Department regularly reports to the Audit Committee. The Audit Committee, in turn, provides quarterly reports to the Board of Directors, ensuring their awareness of the issues and enabling them to assess, address, remediate the incidents as well as develop effective and appropriate strategies to meet stakeholder expectations and complaints. In 2024, no incidents of misconduct by WHAUP's personnel were found, and no whistleblowing or complaints were filed, which in line with our target.

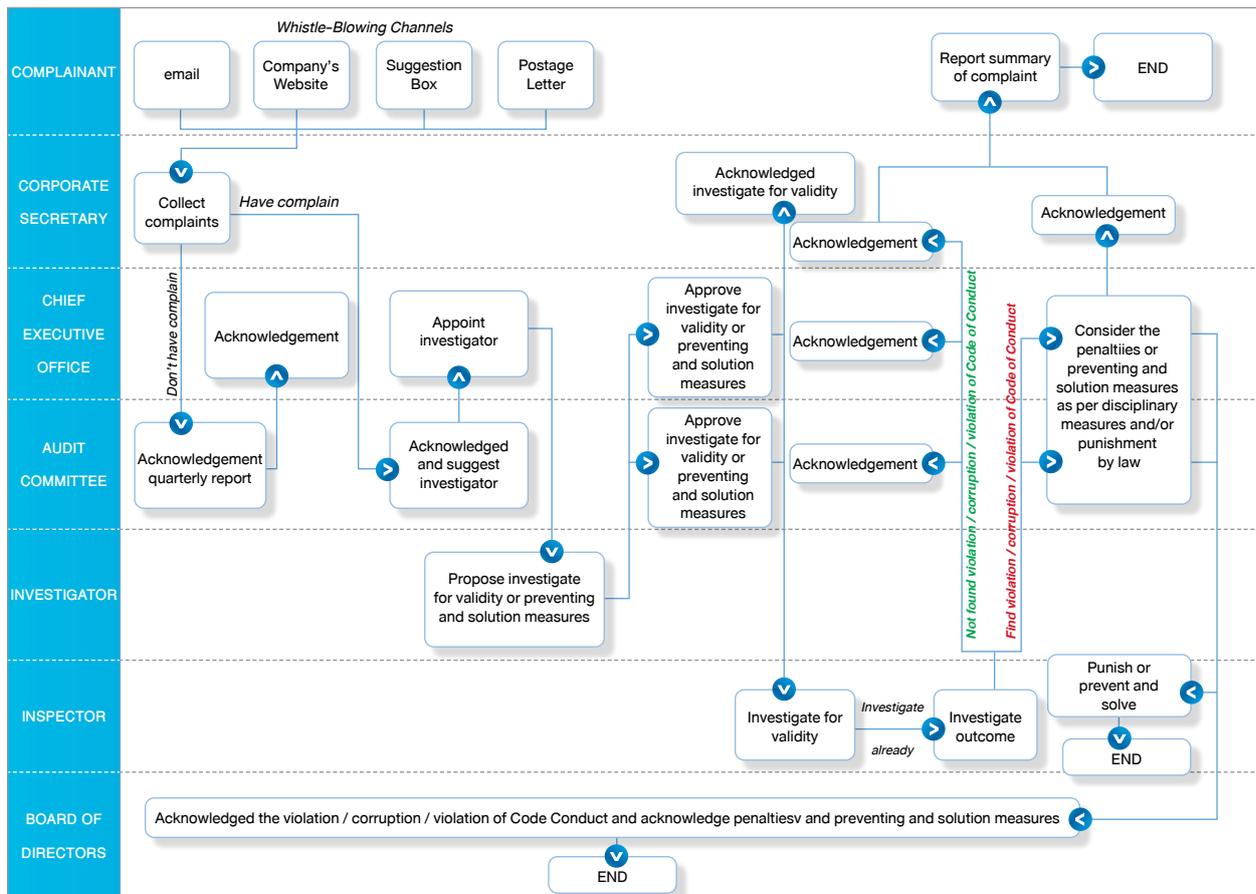
CHANNELS FOR EMPLOYEES

Website:	https://www.wha-up.com/en/contact/whistle-blowing#contact-form
Email:	
Chief Executive Officer:	CEO@wha-up.com
Audit Committee:	auditcommittee@wha-up.com
Suggestion Box:	Human Resources Department

CHANNELS FOR EXTERNAL STAKEHOLDERS

Website:	https://www.wha-up.com/en/contact/whistle-blowing#contact-form
Email:	
Chief Executive Officer:	CEO@wha-up.com
Audit Committee:	auditcommittee@wha-up.com

The process of handling whistleblowing and complaints



Additional information regarding whistleblowing mechanisms or procedures is clearly outlined in the “Code of Conduct and Practices” in Form 56-1 One Report 2024.

THAI PRIVATE SECTOR COLLECTIVE ACTION AGAINST CORRUPTION (CAC)

To emphasize our dedication to anti-corruption and anti-bribery for the benefit of our business operations in all forms, WHAUP has declared our commitment by joining the Thai Private Sector Collective Action Against Corruption (CAC). WHAUP was certified as a member in 2019 and has renewed our certification with CAC in 2022 for 3 years. WHAUP plans to renew our certification in the third quarter of 2025. Additional information regarding policies and practices against corruption and bribery, as well as the certification as a member of the Thai Private Sector Collective Action Against Corruption, can be found in the “Corporate Governance” and in Form 56-1 One Report 2024.

CORRUPTION RISK ASSESSMENT IN WHAUP'S OWN OPERATIONS

WHAUP diligently conducts an annual anti-corruption risk assessment across 100% of our operations. This comprehensive evaluation covers various forms of corruption, such as bribery and other ethical misconduct that could impact the organization’s transparency and governance. Additionally, WHAUP considers both internal and external factors that may pose operational risks, enabling effective management.

The 2024 risk assessment revealed no significant risks from corruption across WHAUP’s operations. Nevertheless, we remain committed to continuous monitoring and assessment of corruption risks to prevent and mitigate future exposures. Particularly in areas identified as high-risk, we have established clear operational procedures that address all forms of corruption, including bribery and other ethical misconduct. This ensures that operational processes adhere to ethical and legal standards. We will also continue to review and update these procedures to consistently strengthen our efforts in corruption risk mitigation.

RESULTS OF 2024 CORRUPTION RISK ASSESSMENT IN OPERATIONS

Type of Corruption with High Risk	Mitigation Measures
Receiving or giving gifts and bribery	100% of business operations
Practices related to charitable donations, giving, and/or receiving sponsorship	100% of business operations
Political contribution	100% of business operations
Procurement	100% of business operations

DUE DILIGENCE OF NEW BUSINESS PARTNERS

WHAUP conducts due diligence on transparency and anti-corruption measures for all new business partners, in line with the WHA Group's practices. This due diligence covers all forms of corruption, including bribery and other ethical misconduct, focusing on assessing risks and relevant anti-corruption regulations to ensure new partners strictly adhere to our governance principles and Anti-corruption Policy. This process is vital for ensuring that business collaborations with WHAUP are transparent and sustainable, and do not promote corruption or illegal activities. We continuously review and refine our due diligence process to align with international standards and the evolving business landscape.

CORRUPTION RISK ASSESSMENT IN SUPPLIERS AND CONTRACTORS

WHAUP has conducted corruption risk assessments and established operational procedures to manage potential corruption from all suppliers and contractors we conduct business with. This is crucial for maintaining transparency standards in business operations. The corruption risk assessment and management process includes evaluating risks from corrupt practices, such as bribery, inappropriate benefits, or other ethical misconduct that may occur during business transactions with suppliers and contractors.

Through this process, WHAUP has developed criteria for selecting and assessing the risks of suppliers and contractors, considering their business history, transparency in operations, and compliance with relevant ethical and legal requirements. We also have established clear operational guidelines for managing corruption from suppliers and contractors, including behavior monitoring and appropriate measures such as financial document verification, clear and transparent agreements, and training for suppliers and contractors on anti-corruption and ethical standards. If corruption risks are identified during the assessment process, WHAUP will conduct detailed investigations and take appropriate actions to ensure operations comply with the transparency and ethical standards we uphold. The aim is to ensure sustainable and corruption-free cooperation with suppliers and contractors. According to the 2024 assessment, 0% of suppliers and contractors were found to have these risks.

3.4 METRICS AND TARGETS

WHAUP prioritizes and is committed to conducting business with transparency and integrity, ensuring that all stakeholders can trust and have confidence in their collaboration, particularly regarding good corporate governance. WHAUP believes that setting clear key performance indicators (KPIs) and targets is crucial for effectively promoting adherence to the Code of Business Conduct across both the organization and our value chain, thereby supporting long-term sustainable development. WHAUP has established the following key indicators to achieve our corporate governance objectives:



Metrics & Targets	Performance against target 2024	Long-term target
Employee that has been communicated with and informed about Code of Conduct and Anti-Corruption Policy and Practices of WHAUP.	100%	100% in every year
Subsidiaries/Associated companies of WHA Group that have been communicated with and informed about the Code of Conduct and Anti-Corruption Policy and Practices of WHAUP.	100%	100% in every year
Supplier/contractors of WHAUP who have been communicated with and informed about Code of Conduct and Anti-Corruption Policy and Practices of WHAUP	100%	100% in every year
Number of cases involving violations of the Code of Conduct or corruption	0 Cases	0 Case

4. IMPACTS ON STAKEHOLDERS AND ENVIRONMENT

WHAUP is consistently committed to complying with laws and strictly adhering to corporate governance principles. We have established a Code of Conduct and Practices aligned with WHA Group’s Code of Conduct, ensuring all personnel are aware of and follow it. We also implement robust anti-corruption measures and promote whistleblowing and complaint processes, while continuously reviewing policies and practices. This commitment enables WHAUP to be recognized as an organization that operates with transparency and social responsibility.

This transparent approach not only fosters pride in our employees as part of the organization but also positively impacts all stakeholders, including customers, suppliers, and investors. It builds trust and confidence, contributing to a strong corporate image and reputation within society. Furthermore, reducing the risks of corruption and legal violations fosters organizational ethics and creates sustainable value, minimizing negative environmental and social impacts. This facilitates WHAUP’s stable and sustainable long-term growth.

5. NEXT STEP

WHAUP prioritizes conducting business with integrity and transparency, continuously considering the interests of all stakeholders. This commitment reflects our strong corporate governance and the absence of any corruption incidents in 2024. However, we remain dedicated to developing, reviewing, and improving our corporate governance policy, processes, and action plans to adapt to the evolving business environment. We emphasize supporting policies that promote equality and fairness at all organizational levels, coupled with consistent monitoring and evaluation of performance to achieve both business and Environmental, Social, and Governance (ESG) objectives.

Furthermore, WHAUP continues to plan and implement new projects aimed at developing a transparent and sustainable governance structure. This includes promoting training for personnel at all levels to enhance their understanding of ethical standards, improving internal audit processes to increase governance efficiency, and reducing the risk of corruption and legal violations. We are also developing a transparent and verifiable performance reporting system to ensure our long-term sustainable and corruption-free business operations.





RISK AND CRISIS MANAGEMENT

1. GLOBAL TREND

In an era where businesses face increasingly rapid and complex risks and uncertainties, proactive risk management has become essential for organizations worldwide, including those in Thailand. Key factors contributing to business challenges include regional and global economic shifts, changes in social and cultural norms, evolving consumer expectations, and technological advancements that present both opportunities and new threats.

One of the key risk factors for businesses is the increasingly stringent laws and regulations related to sustainability (ESG), such as Net Zero targets and carbon reduction measures. Organizations must adapt their strategies to comply with legal requirements and meet stakeholder expectations. In Thailand, environmental risks have become increasingly significant, mirroring global trends. These include notably the effects of climate change, such as flooding in key economic zones, rising temperatures impacting agriculture, and challenges in water resource management, which can affect public utility and energy services that rely on natural resources and stable infrastructure. Moreover, technological disruption remains a major factor. Organizations that fail to adapt to or timely implement emerging technologies, such as automation and Artificial Intelligence (AI), risk losing competitiveness. Simultaneously, cyber threats, such as ransomware and sophisticated digital attacks, continue to intensify, posing serious challenges to business security.

To mitigate these risks, leading organizations both globally and in Thailand are placing greater emphasis on proactive risk management across economic, environmental, and technological dimensions. This approach aims to develop flexible mechanisms capable of effectively responding to future changes. It not only helps reduce risk exposure but also creates opportunities to enhance value and drive long-term sustainable growth.

2. OUR POSITION

Amidst the rapidly changing and complex business environment, WHAUP recognizes the importance of comprehensive and flexible risk management and has integrated risk management as part of the organizational strategy applied throughout WHA Group. Emphasis is placed on developing up-to-date policies and practices such as transparent corporate governance, anti-corruption measures, compliance with the Personal Data Protection Act (PDPA), and ESG risk management that covers both climate change mitigation and cybersecurity threats. Additionally, WHAUP has established a Risk Management Committee to set policies and operational plans aligned with the objectives of both WHAUP and WHA Group. WHAUP also promotes a risk-aware culture at all levels by leveraging technologies and innovations such as Artificial Intelligence (AI) and advanced data analytics to support effective decision-making.

This commitment not only mitigates business risks but also generates positive impacts for stakeholders. It enhances customer trust, increases transparency for investors, and promotes stability for employees. Furthermore, it strengthens WHAUP's competitive capabilities and long-term sustainability amid ongoing economic and social changes.



3. MANAGEMENT APPROACH

3.1 GOVERNANCE STRUCTURE

ENTERPRISE RISK MANAGEMENT STRUCTURE AND RESPONSIBILITIES

WHAUP defines the roles and responsibilities as well as the delegation of authority for those involved in the risk management process, as well as the designation of decision-makers responsible for managing the organization's risks. Additionally, the structure of managing risk information and reporting is detailed as follows:

BOARD OF DIRECTORS

Board of directors is responsible for setting risk management policies and overseeing the effective management of risks in accordance with international standards and aligned with the business strategies implemented throughout WHA Group. This includes considering environmental, social, and governance (ESG) factors, the Code of Conduct, and human rights principles. The Board also defines clear directions and scope for the Enterprise Risk Management Framework to ensure it is appropriate and sufficient for the WHAUP, guaranteeing that the Group's operations are sustainable and accountable to all stakeholders. Additionally, the Board delegates clear roles, duties, and responsibilities to relevant parties at all levels to enhance the effectiveness of enterprise risk management and establishes comprehensive guidelines for implementing these policies. The Board has also appointed a Risk Management Committee to support the Board in effectively managing the organization's risks.

RISK MANAGEMENT COMMITTEE

The Risk Management Committee consists of WHAUP's Chief Executive Officer and members of the Board of Directors. It is responsible for overseeing the overall risk management process of WHAUP. The committee's duties include establishing a risk management framework that aligns with WHAUP's objectives, key goals, and strategies. This framework serves as a guideline for consistent and comprehensive risk management across the entire organization. Additionally, the committee oversees business continuity management and supervises the risk management of WHAUP and its subsidiaries or other

significant investments in which WHAUP has substantial stakes, to ensure compliance with the established policies. The Risk Management Committee monitors the progress of the risk management plan and key risk indicators to promote continuous improvement and development of systems and mechanisms for managing risk within the organization. This includes coordination and provision of key risk and internal control information to the Audit Committee to assess the adequacy of the risk management and internal control systems. This information can also be used to support the consideration and approval of internal audit plans, ensuring confidence that WHAUP has an appropriate internal control system for risk management.

The Risk Management Committee holds meetings held at least four times a year to review risk exposure of WHAUP based on impact and likelihood of specific risk and establish a risk management framework and business continuity management plans accordingly (see key organization's risk section for full detail of WHAUP's risk exposure).

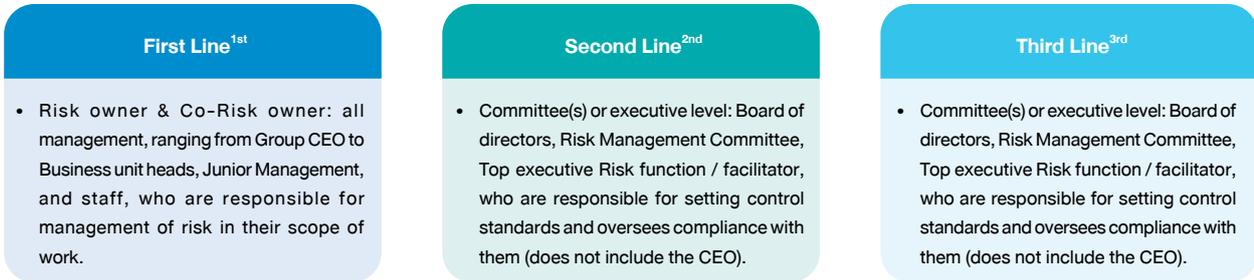
RISK MANAGEMENT WORKING GROUP

The Risk Management Working Group consists of senior executives, business unit managers, risk owners, and risk support and coordination personnel. Its responsibilities include reviewing and monitoring WHAUP's enterprise-wide risk management operations regularly, particularly focusing on business performance risks, business ethics risks, and environmental, social, and governance (ESG) risks. This ensures that WHAUP as a whole can manage risks in accordance with the policies and risk management framework set by the Risk Management Committee. The Working Group also ensures that risk information is kept up to date and adjusted appropriately when significant changes or critical risks occur throughout the year. The Risk Management Working Group holds regular meetings to monitor the risk data, identify risks, potential impacts, and business opportunities, and prepare risk management reports for the Risk Management Committee at least four times a year. These reports are then presented to the Board of Directors on a quarterly basis. Furthermore, WHAUP's risk management processes are reviewed through internal audits and external audits to ensure effectiveness and compliance.



THREE LINES OF DEFENSE (3LOD)

WHAUP has adopted the Three Lines of Defense (3LOD) from the Institute of Internal Auditors (IIA) 2020 as a good governance practice framework to ensure effective organizational risk management. WHAUP has also established governance mechanisms to oversee the appropriateness of the risk management system by clearly delineating risk management responsibilities into three distinct lines of defense, as follows:



FIRST LINE

Responsible for adhering to and implementing WHAUP's risk management policies and procedures. Each individual is accountable for managing risks within their scope of responsibility by identifying, analyzing, assessing, prioritizing, and managing these risks in accordance with the company's risk management policy, and reporting these risks to the designated supervisory unit.

SECOND LINE

Responsible for setting the risk management policies and frameworks as well as oversees the risk management process to ensure that all risk-related activities are conducted effectively and efficiently. This includes defining the acceptable risk level (Risk Appetite), setting

the acceptable risk deviation level (Risk Tolerance), setting clear guidelines, measurable targets, and continuously monitoring and reviewing the process to ensure alignment with organizational goals and regulatory requirements.

THIRD LINE

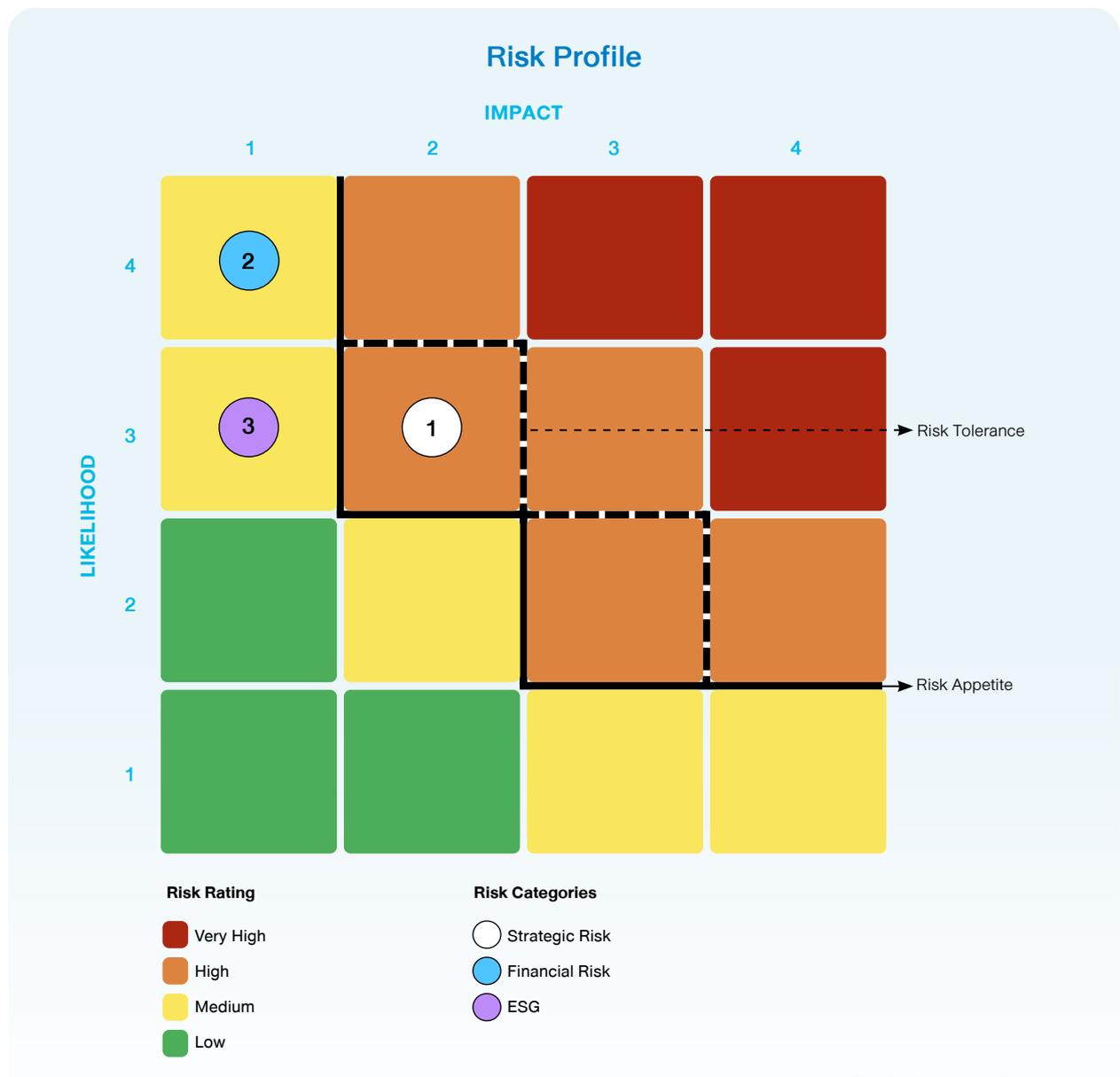
Responsible for assessing the adequacy of risk management and internal controls and approving the internal audit plans to ensure WHAUP has appropriate internal controls for managing risks. Additionally, it provides independent and objective advisory support in assessing the effectiveness of both the first and second lines of defense. (For more details on the risk management policy, framework, and structure, please refer to the Form 56-1 One Report 2024).

3.2 RISK AND OPPORTUNITIES MANAGEMENT STRATEGY

KEY ORGANIZATIONAL RISKS

WHAUP requires risk analysis and assessment that considers both external and internal risk factors that may prevent the organization from achieving its established objectives. This covers strategic risks, operational risks, compliance risks with applicable laws, regulations, and requirements, as well as Environmental, Social, and Governance (ESG) risks, which are considered significant risks for WHAUP.

After identifying the risks and evaluating the level of impact for each, WHAUP has established response measures and preventive actions to control the risks within an acceptable level. The risk assessment process begins with defining objectives and goals, identifying risks that may affect the achievement of those objectives and goals, assessing the risks, and prioritizing them based on both the likelihood and the severity of potential impacts (Risk Exposure). Additionally, WHAUP defines the acceptable risk level (Risk Appetite) and the permissible deviation from that level (Risk Tolerance) to determine the acceptable risk thresholds for each type of risk. Monitoring and evaluation of the risk management performance are carried out on an ongoing basis, as follows:



Risk Profile of WHAUP

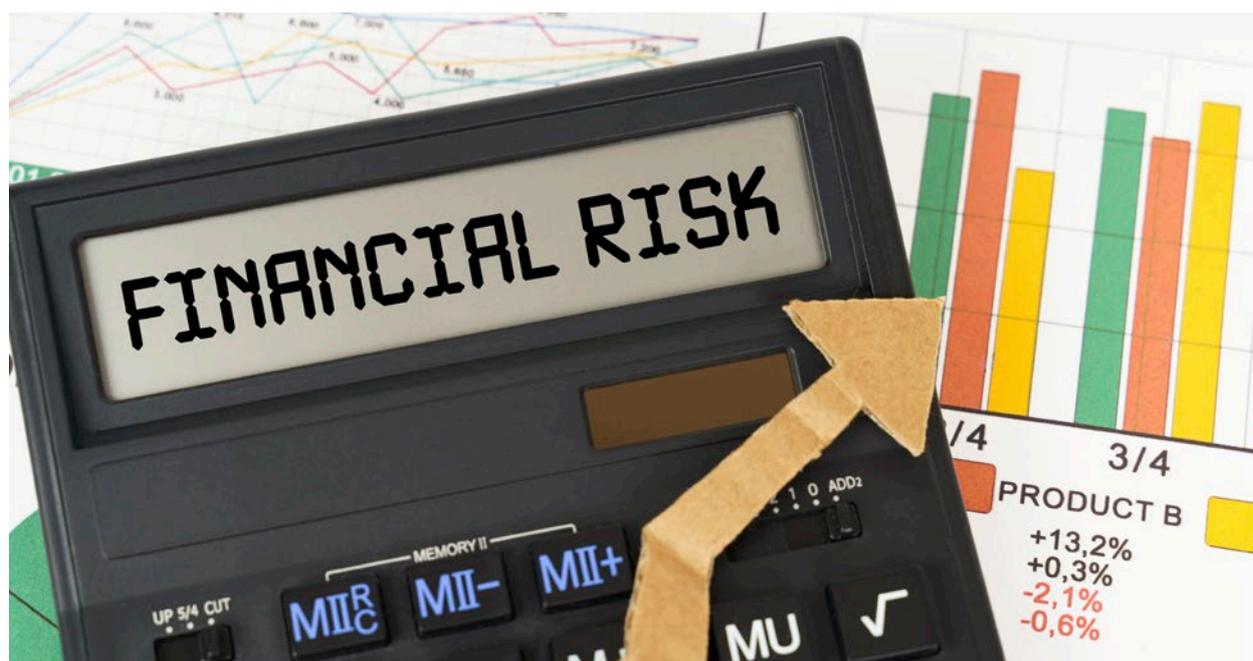
Risk Tolerance

Risk Categories	Risk Exposure	Impact	Mitigation plan
1. Strategic Risk	Changes in economic, political, or legal policies that may affect WHAUP's business expansion plans and operational performance in foreign countries.	Opportunities of WHAUP for business expansion and operational performance depend on economic, political, social, and legal policies, especially significant if the economic conditions deteriorate significantly, including risks related to liquidity, inflation, and exchange rate volatility, as well as risks arising from other companies' defaults in the future. These may affect overall interest rates or social and legal changes that could negatively impact business operations, financial status, performance, investments, and the reduction of production capacity of various industrial operators, who are the current customer base of WHAUP, or delays in investment decisions, which may negatively affect WHAUP's business.	WHAUP evaluates investment projects based on the Equity Internal Rate of Return (IRR) at an appropriate level to determine their feasibility. It conducts detailed feasibility studies and sensitivity analyses to understand the potential impacts of various factors. For joint venture projects, WHAUP has a careful partner selection policy based on their knowledge, capabilities, experience, expertise, financial status, and past performance. It also assesses and verifies the credibility of potential partners and the countries where investments are planned. WHAUP regularly reviews risk factors related to foreign investment projects. Additionally, WHAUP continuously monitors and manages operational risks by deploying personnel in foreign countries to support business development and control operations, reducing the risk of potential issues.



Risk Appetite

Risk Categories	Risk Exposure	Impact	Mitigation plan
2. Financial Risk	Foreign Exchange Volatility Risk	WHAUP primarily generates revenue in Thai baht. However, certain transactions are required to be settled in foreign currencies, such as investments in solar cell systems and the procurement of solar panels and spare parts, which must be purchased or contracted directly from foreign manufacturers. As a result, WHAUP cannot entirely avoid foreign exchange risk. Nevertheless, for investments in solar cell system projects, WHAUP has a policy to limit investment volatility within the set investment budget. Since exchange rate volatility plays a significantly role in increasing or decreasing the actual investment amount from the set budget, WHAUP manages the foreign exchange risk for the entire portion of foreign currency-based investments to eliminate exchange rate risk from the investment plans of each project.	As of March 31, 2024, WHAUP had capital expenditure commitments related to operations in foreign currencies amounting to USD 11 million. This amount was for procurement of solar panels and spare parts. WHAUP has managed this foreign exchange risk by entering forward contracts for the full amount. For other foreign exchange risks, WHAUP calculates and analyses foreign exchange exposure separately by currency for both income and expenditure to assess the potential impact of exchange rate fluctuations on profit and compare it with the likelihood of such fluctuations. This analysis supports decision-making on whether to use financial instruments to mitigate foreign exchange risk appropriately, taking into account the cost of risk management during different periods. In addition, WHAUP has diversified its financial management strategy by investing abroad, which not only enhances investment returns but also generates income in foreign currencies.



Risk Categories	Risk Exposure	Impact	Mitigation plan
3. ESG Risk	Air Pollution Risk	<p>Air pollution can impact the operations of WHAUP in various dimensions, including legal liability, corporate image, and operational costs. If pollution is not properly managed, WHAUP may face fines or penalties under environmental laws, as well as the risk of losing trust from customers and investors, which could affect its long-term competitiveness. In addition, efforts to mitigate pollution require additional investment in technologies aimed at reducing emissions, as well as ongoing environmental monitoring and impact assessments.</p> <p>The impact of air pollution also extends to various stakeholder groups. Communities in surrounding areas may experience health issues from inhaling particulate matter and toxic gases, which can cause respiratory diseases and reduce quality of life. Employees working in areas with long-term pollution exposure may also suffer from chronic health problems, affecting work performance. At the same time, and business partners who prioritize environmental responsibility may question WHAUP's commitment if pollution issues are not effectively addressed, potentially leading to a lost business opportunities and increased risk of losing clients to competitors with clearer and more proactive environmental policies. Therefore, air pollution management is a key priority for WHAUP in maintaining sustainable business operations. It is essential to build stakeholder confidence and preserve strong relationships through transparent and responsible environmental practices across all dimensions of the business.</p>	<p>WHAUP has measures to oversee air pollution emissions from industrial factories located within WHA's industrial estates to comply with the emission standards from sources as prescribed by notifications of the Ministry of Industry announcements, the Industrial Estate Authority of Thailand notifications, and the emission allocation rates specified in the environmental impact prevention and mitigation measures in the Environmental Impact Assessment (EIA) report. For example, air quality monitoring is conducted by measuring the total suspended particulate (TSP) index in both industrial estate area and surrounding community areas.</p>

Risk Categories	Risk Exposure	Impact	Mitigation plan
	Water Pollution Risk	Water pollution is a critical issue that severely impacts the environment and human health worldwide. The main causes of water pollution include the discharge of industrial wastewater, chemical-intensive agricultural activities, and the dumping of waste into water sources. These toxic substances can destroy aquatic ecosystems and affect human health. Furthermore, legal requirements for wastewater treatment add to regulatory compliance burdens and increase costs related to investments in wastewater treatment infrastructure.	WHAUP employs various technologies for treating wastewater discharged from customer factories each year, such as conventional activated sludge treatment systems, ultrafiltration and reverse osmosis processes, modified activated sludge systems, sedimentation tank systems, constructed wetland systems, and aerated pond treatment systems. Additionally, WHAUP operates real-time water quality monitoring stations (Water Quality Monitoring Station: WQMS), which are part of WHAUP's Environmental Monitoring and Control Center (EMCC) to ensure that the quality of wastewater from all treatment plants complies with the required standards before being discharged into natural water sources.

EMERGING RISK



WHAUP recognizes the importance of emerging risks that may impact business operations. Therefore, WHAUP's risk management process also covers this type of risks by monitoring, assessing, and identifying appropriate response strategies based on selected risk mitigation plans to reduce severe impacts. As a result, WHAUP has considered emerging risks, including technological disruption and business model transformation risks (Risk from Digital Disruption), risks arising from the enforcement of climate policies (Climate Policy), geopolitical tensions and manufacturing base relocation (Geopolitical Tension & Manufacturing Relocation), and pollution-related risks (Pollution Risks).

1. RISK FROM DIGITAL DISRUPTION

RISK DESCRIPTION

In an era where technology plays a crucial role in advancing businesses rapidly, various technologies such as clean technology, blockchain, remote working, and Artificial Intelligence (AI) can significantly enhance both business performance and environmental sustainability. However, these technologies can also introduce uncertainties to business operations, especially for businesses slow to adapt to technological changes. This can result in an inability to keep pace with a competitive technology-driven market. Therefore, lack of readiness and risk management in response to technological changes can potentially lead to operational delays, reduced profits, and loss of customer confidence and loyalty.

Furthermore, the changing consumer behaviours post COVID-19 crisis, with increased use of technology and the internet, have led to rapid growth in the e-commerce market and a trend towards greater reliance on online services. Therefore, businesses that fail to adapt by leveraging technology to meet customer demands may suffer financial repercussions, damage to reputation, and loss of customer trust, resulting in reduced revenue.

IMPACT ON BUSINESS FROM DIGITAL DISRUPTION AND BUSINESS MODEL

WHAUP does not only consider the risks from technological changes but also recognizes numerous business opportunities.

Risks

- Failure to adapt to technological changes may affect WHAUP's competitiveness as its products and services may not meet the constantly changing consumer demands.
- Additionally, WHAUP may miss out on significant business opportunities, if it cannot fully leverage the potential of rapidly growing technologies.

Opportunities

- WHAUP can turn the risk of technological changes into opportunities by leveraging various digital technologies and innovations across its business to respond to and benefit from new opportunities in the digital age

WHAUP is currently encountering new challenges in meeting customer expectations. As a result, it is imperative for WHAUP to enhance its products and services, fostering innovation and digital empowerment. By doing so, WHAUP can effectively address the evolving expectations and needs of customers. This involves the crucial task of tailoring products and services to cater to a wide array of customer preferences and requirements.

At the same time, WHAUP is committed to developing and offering smart solutions equipped with cutting-edge technologies to its customers. WHAUP plans and carries out the use of clean technology to meet customer needs, while also placing importance on achieving environmental sustainability.

RISK MANAGEMENT APPROACH FOR BUSINESS DIGITAL DISRUPTION AND BUSINESS MODEL



Managing technological change by viewing digital technology developments as both risks and business opportunities is a strategic approach that WHAUP has adopted to address technological disruption. In collaboration with WHA Group, WHAUP is steering the organization toward Digital Transformation. As such, WHAUP has integrated a variety of digital innovations across all business segments, focusing on improving and enhancing its products and services, adapting to emerging innovations and technologies, and upgrading internal processes and systems. These efforts are aimed at enabling the organization to respond effectively and seize new opportunities in the digital era. To achieve these goals, WHAUP has implemented the following key risk management measures:

- Establishing a strong internal management system to enhance competitiveness in the technology era through the integration of goals related to the application of digital innovations in WHA KPI and the ORACLE HCM Cloud human capital management system, among others.

- Recruiting experts in technology as part of the organization continuously and seeking opportunities to collaborate with leading technology companies both domestically and internationally.
- Integrating digital innovation application into business operations as KPIs in evaluating the performance of all employees, as well as organizing projects that allow employees to participate in developing new innovations to enhance business competitiveness.
- Providing training on technology-related topics, such as training for innovation leaders and organizing seminars on various innovation topics for all employees.
- Adopted technology and innovation to expand its energy-related products and services, particularly innovations related to clean energy such as Peer-to-Peer Energy Trading systems and Energy Storage systems. In addition, WHAUP has implemented the Smart Water Solutions project to upgrade the management of industrial water production and distribution systems into a digital system. This includes establishing a geographic information database of the water distribution pipeline network to support WHAUP's asset management and future maintenance planning. Moreover, WHAUP has installed automatic water meter reading devices to reduce the need for manual meter readings and utilizes key data from water production and distribution systems in operational planning, such as extending the lifespan of pipeline equipment and reducing water loss.



2. RISK FROM CLIMATE POLICY

RISK DESCRIPTION

Thailand is currently facing significant challenges in achieving its sustainable development goals due to the escalating impacts of climate change. In 2022, the country announced its long-term commitment to achieving carbon neutrality by 2050 and net-zero greenhouse gas emissions by 2065. In support of this commitment, the government issued the National Greenhouse Gas Emission Reduction Roadmap (2021–2030), which outlines 15 mitigation measures. Five of these, namely, measures for electricity generation, industrial energy use, commercial building energy use, waste management, and industrial wastewater management are expected to impact WHAUP in terms of cost, operations, and the ability to maintain its leadership in the utilities and energy sector. This presents both a challenge and an opportunity for WHAUP to prepare for the changes ahead.



IMPACT ON BUSINESS FROM CLIMATE POLICY

WHAUP has conducted a risk factor analysis to identify the significant impacts of climate change on its business operations. This assessment utilized qualitative scenario analysis to evaluate the implications of two greenhouse gas emission scenarios, RCP 8.5 and RCP 2.6, which are the results of climate change mitigation policies during the period 2000–2100. These scenarios may have critical implications for WHAUP’s business, as outlined below:

- Legal and regulatory changes may increase the cost of materials, which may have long-term impacts on WHAUP’s business strategies and goals, as well as increased operating costs from

regulations related to climate change. The estimated financial impact of operating costs is less than 10% of development costs.

- Regulatory changes may also result in decreased demand for WHAUP’s products and services due to fines and heightened expectations faced by customers. The anticipated decline in customer demand is expected to financially impact WHAUP’s revenue, with an estimated 10 percent reduction in revenue from utilities and power sales and services compared to the quarterly budget.
- Potential policy changes may result in new requirements that compel WHAUP to cease the use of high-carbon assets, leading to asset impairment and early retirement of existing assets.
- If WHAUP’s operations are not aligned with the evolving laws and regulations, this may result in legal penalties imposed by the government.

Based on the above impact analysis, if WHAUP fails to meet the expectations and demands of stakeholders regarding environmental responsibility and raising awareness of air immunity issues, it is expected to affect WHAUP in terms of costs, operations, reputation, maintaining its leadership position in the business, or potentially facing legal penalties as well as other liabilities. However, WHAUP recognizes the critical importance of climate change and understands that it brings both risks and business opportunities. Therefore, WHAUP must prepare to respond to changes in laws and regulations related to greenhouse gas emissions.

In addition, WHAUP has been developing energy-efficient building design systems and promoting the use of solar energy generated from rooftop solar panels. These efforts benefit WHAUP, WHA Group, and customers by helping to reduce their carbon footprint. Furthermore, they can be leveraged to offer carbon credits to other companies for carbon offset purposes. WHAUP has also planned to continuously develop its rooftop solar panel installation services to ensure a stable energy source and maximize benefits for its customers.

RISK MANAGEMENT APPROACH FOR CLIMATE POLICY ENFORCEMENT

WHAUP has implemented risk mitigation measures and created opportunities for sustainable business growth in the utilities and power sector in response to climate change policies and regulations. WHAUP has adopted the following key risk management approaches:

- Study and monitor mechanisms and approaches for greenhouse gas reduction at both national and international levels, including the development of carbon markets, carbon credit pricing, and carbon tax policies. These insights are used to analyze potential economic impacts on WHAUP and to adjust the operational strategies of WHAUP and WHA Group accordingly.
- Adjusting investment strategies to achieve a balanced investment ratio in natural gas, coal-fired power plants, and renewable energy power plants. Also, developing greenhouse gas management strategies and reduction targets in line with the country's investment strategies and goals.
- Adjusting business operation strategies of WHAUP to be more suitable to current and future law and regulations. This includes focusing on developing various projects under the "Mission To The Sun" mission, such as reducing water usage in the industrial sector (e.g., projects to reuse water, smart metering projects), alternative energy projects (e.g., solar panel installations), environmentally friendly

transportation (e.g., smart traffic management systems to reduce carbon dioxide emissions), and promoting the circular economy concept. These projects not only help address climate change but also reduce operational costs, enhance business flexibility, and promote sustainable business operations.

- Promoting use of construction materials that help reduce greenhouse gas emissions, using high-quality materials to reduce waste, and promoting the reuse and recycling of construction materials.
- Applying Internal Carbon Pricing as one of the guidelines for reducing greenhouse gas emissions within the organization.

3. RISK FROM GEOPOLITICAL TENSION & MANUFACTURING RELOCATION

RISK DESCRIPTION

Given the situation of conflicts between countries, challenges from political factors, competition among countries, military conflicts between countries, as well as fluctuations in exchange rates and interest rates due to fragile economic conditions, all sectors are facing challenges in managing the new risks at both regional and business levels, which are complex, interconnected, and have wide-ranging international implications. WHAUP considers these events as one of the contexts for the new risks that are emerging and are likely to persist in the next 1-2 years, requiring the organization to closely monitor and supervise operations to prepare for various uncertainties that may arise.



IMPACT ON BUSINESS FROM GEOPOLITICAL TENSIONS & MANUFACTURING RELOCATION

The world is currently facing multiple conflicts in various forms, ranging from trade, technology, and security wars between the United States and China, to the war between Ukraine and Russia, as well as confrontations between Israel and Hamas. Additionally, there are regional conflicts such as tensions on the Korean Peninsula, the trajectory of China-Taiwan relations, and unrest in Myanmar. These events have all impacted international trade, capital movement, and led to shifts in global production strategies, whether through reshoring manufacturing to home countries or relocating production to neighboring and allied countries.

Furthermore, 2024 was a significant election year for over 60 countries worldwide. The election outcomes inevitably affect geopolitical situations, as seen in the return of Donald Trump as president in what is termed “Trump 2.0.” This not only signals major changes within the United States but also brings risks and negative impacts on global stability, particularly on global economic growth, which is likely to slow due to import tariff policies and tighter financial conditions. Moreover, geopolitical tensions and trade wars between the US and China are expected to intensify, potentially causing ongoing uncertainty in global financial markets and the economy. On the environmental front, the US withdrawal from the Paris Agreement on climate change and the rollback of environmental regulations may stall global efforts to address climate issues. It is predicted that global greenhouse gas emissions could increase by up to 4 billion tons by 2030, causing the global temperature to rise beyond 1.5 degrees Celsius. This would lead to more severe natural disasters, impact economic systems, and reduce the quality of life worldwide in the long term.

The US trade protectionist policies targeting China may accelerate the relocation of production bases and supply chains to the Southeast Asia region. WHAUP has benefited from business opportunities arising from this shift of investment into Thailand and Vietnam across several industries, such as the automotive industry supported by electric vehicles (EVs), electronic

component manufacturing, and the renewable energy industry, as Asia strives toward sustainable energy reliance. However, while these developments create opportunities to attract foreign direct investment (FDI) and boost export growth, they also come with challenges that need to be managed. Therefore, Thailand must implement careful policies to balance its relations between the two superpowers while preparing for changes in the global economy. Clear strategic direction, enhancing national competitiveness, and cooperation between the public and private sectors will be crucial factors to drive Thailand’s economy steadily through this challenging era.

The impact of geopolitical conflicts, war threats, and global economic factors inevitably affects trade supply chains and the global economic system. For example, the rising costs of fuel and raw materials increase WHAUP’s operating expenses. Additionally, monetary and fiscal policy management under conditions of inflation control and tightened international economic circumstances also affect WHAUP’s financial cost management, including foreign exchange rates and interest rates. These factors impact WHAUP both in terms of revenue and expenses, arising from raw material procurement and project investments, among others.

RISK MANAGEMENT APPROACH FOR GEOPOLITICAL TENSIONS

WHAUP considers and manages operations under the strategy of expanding the organization’s growth both domestically and internationally. WHAUP manages risks and impacts starting from the selection of investment projects, which involves evaluating potential outcomes in both the short and long term. It also includes building business partnerships in the study area and closely monitoring the business environment through WHAUP’s personnel in the area. Moreover, it involves considering exit strategies in suitable situations, as well as monitoring, compiling, and analysing significant global trends, including industry trends, market advancements, technological progress, and multifaceted policies. This is used to forecast commodity prices, production costs, and long-term business operations, and to devise measures that create flexibility and alternative



markets and products. This enables WHAUP to adapt our business swiftly in uncertain situations. Additionally, it involves monitoring interest rates and financial costs to find suitable financial tools that provide maximum benefit to WHAUP.

4. RISK FROM POLLUTION

AIR POLLUTION RISK DESCRIPTION

Air pollution caused by business operations, especially in the industrial sector, remains a widespread issue affecting both the environment and the health of the public, including communities near business areas. These factors impact long-term quality of life and pose obstacles to sustainable economic development if not addressed properly and promptly.

In the current context, advanced technologies have been integrated to effectively tackle this problem, such as the installation of high-efficiency pollution control devices, the use of renewable energy to replace fossil fuels, and real-time air quality monitoring through intelligent systems. These technologies enable rapid identification and precise management of pollution issues. Moreover, promoting community and employee engagement has become a key factor in combating air pollution over the long term. Activities such as awareness campaigns, education on pollution reduction methods, support for green space restoration projects, and collaboration in developing environmental policies with government agencies allow businesses to demonstrate higher social and environmental responsibility through these proactive approaches. At the same time, such efforts support the Sustainable Development Goals, meeting the growing expectations of stakeholders at all levels.

IMPACT ON BUSINESS FROM AIR POLLUTION

As WHAUP is a fully integrated provider of utilities and power services, air pollution poses a significant challenge that could impact its operations in terms of legal liabilities, corporate image, and operational costs if not managed appropriately. Failure to properly control pollution may result in fines or penalties under environmental laws, as well as the risk of losing trust from customers and investors, potentially affecting WHAUP's long-term competitiveness. Moreover, mitigating pollution impacts requires additional budget allocations for investments in pollution control technologies, as well as ongoing monitoring and environmental impact assessments.

The consequences of air pollution extend broadly to various stakeholders, such as communities living near operational sites who may suffer health problems from inhaling particulate matter and toxic gases, leading to respiratory diseases and reduced quality of life. Employees may also be affected if working in areas with prolonged exposure to accumulated pollution, potentially causing chronic health issues and affecting work performance. Meanwhile, customers and business partners who prioritize environmental responsibility may question WHAUP's accountability if pollution is not properly managed, possibly reducing business opportunities and increasing the risk of losing clients to competitors with clearer environmental policies. Therefore, managing air pollution is a priority for WHAUP to ensure sustainable business operations, build confidence, and maintain good relationships with all stakeholders through transparent and environmentally responsible practices in every aspect.

RISK MANAGEMENT APPROACH FOR AIR POLLUTION

Dust particles suspended in the air can adversely affect the performance of solar cells by obstructing sunlight from reaching the photovoltaic surface, resulting in reduced electricity generation. Solar panels with larger surface areas tend to be more affected by dust than those with smaller areas. Additionally, panels installed in direct sunlight are more prone to dust accumulation compared to those oriented to receive diffused sunlight. More importantly, the accumulation of dust can increase the risk of damage, degradation, and reduced lifespan of solar cells, which may also impact on related equipment such as inverters, cables, and control devices.

WHAUP has a Unified Operation Center (UOC) at the WHA Tower to monitor operations in real time. The system integrates and gathers data from various utility systems and environmental indicators within the area, such as air quality, wind speed, and wind direction, in order to display and analyze information to assess the efficiency of services provided to operators. For WHAUP, the UOC enhances the capability to remotely monitor and manage all solar power plants. In the event of dust accumulation on solar panels, which may block the sunlight required for electricity generation and cause a drop in output, the system will issue an alert to the UOC. The responsible unit will then be dispatched to clean the solar panels, allowing them to resume normal electricity production. In the case of emergencies or crises that restrict travel, the UOC will serve as a secondary command center to ensure that solar power plants continue to operate effectively. This system provides assurance to customers and investors that the business can continue without interruption.

In addition, the UOC helps reduce environmental pollution by minimizing air pollutant emissions and dust generated by vehicles used in field operations. This supports WHAUP in achieving their targets for maintaining air quality within the standards specified in Environmental Impact Assessment (EIA) requirements. Moreover, it contributes to a reduction in direct greenhouse gas emissions (Scope 1) by decreasing fuel consumption from operational vehicles.

WATER POLLUTION RISK DESCRIPTION

Water pollution is a major issue that has serious impacts on the environment and human health worldwide. The main causes of water pollution include the discharge of industrial wastewater, the use of chemicals in agriculture, and the disposal of waste into water sources. These toxic substances can damage aquatic ecosystems and pose health risks to humans. Moreover, legal requirements for wastewater treatment increase the burden of regulatory compliance and the cost of investing in wastewater treatment infrastructure.

IMPACT ON BUSINESS FROM WATER POLLUTION

WHAUP recognizes the importance of natural water sources to communities, the environment, and the public, as well as the potential impacts of business operations on these water sources. Therefore, WHAUP ensures that wastewater is treated to meet the quality standards prescribed by the Ministry of Industry, the Industrial Estate Authority of Thailand (IEAT), and the Ministry of Natural Resources and Environment. Wastewater must be treated through the central wastewater treatment system within the industrial estates of WHA and pass water quality testing before it can be discharged into natural water sources such as rivers and canals or reused within the industrial estates. This approach helps protect and preserve the surrounding environment and nearby communities while also reducing dependence on external water sources.

RISK MANAGEMENT APPROACH FOR WATER POLLUTION

WHAUP employs a variety of technologies to treat wastewater discharged from customers' factories each year. These include the activated sludge system, ultrafiltration and reverse osmosis processes, modified activated sludge systems, clarifier systems, constructed wetlands, and aerated lagoon systems. Additionally, WHAUP monitors the quality of treated wastewater, such as COD, BOD, pH, electrical conductivity, nitrate, suspended solids, and dissolved solids, through a real-time Water Quality Monitoring Station (WQMS). This system operates as part of WHAUP's Environmental Monitoring and Control Center (EMCC) to ensure that the treated water from

all wastewater treatment plants meets the required standards before being discharged into natural water sources. The WQMS is also linked to the government’s real-time wastewater quality reporting system. In the event of any standard violations, the system triggers an alert to relevant operators to activate pumps and reprocess the wastewater until it complies with the required quality standards.

5. RISK FROM NATURAL RESOURCE SHORTAGES
RISK DESCRIPTION

Water is a vital resource that connects all dimensions of life. It is not only essential for human survival and ecosystems but also serves as a key driver of economic activity across various industries, including agriculture, manufacturing, and services. However, the intensifying impacts of climate change have led to greater challenges in water management, such as prolonged droughts, which may affect production processes and increase the cost of securing alternative water sources in the event of water shortages.

IMPACT ON BUSINESS FROM NATURAL RESOURCE SHORTAGES

Water shortages may affect production processes and increase the cost of securing alternative water sources, potentially disrupting planned operations. This can impact business performance and lead to the loss of market opportunities if water cannot be supplied in a timely manner or if costs rise. Competition for water resources between industrial and community sectors can also lead to conflicts, resulting in dissatisfaction among local communities and potentially damaging the organization’s reputation. In addition, stricter legal requirements regarding efficient water use and wastewater treatment will increase the burden of regulatory compliance and investment costs for water treatment infrastructure.

RISK MANAGEMENT APPROACH FOR NATURAL RESOURCE SHORTAGES

At present, WHAUP adopts a sustainable water management approach that emphasizes the development of technologies and innovations to address emerging challenges. Key focus is placed



on the integration of digital technologies into water management practices, such as the use of smart meters and Artificial Intelligence (AI) to monitor water quality, forecast water demand, and reduce water losses within production systems. Additionally, WHAUP prioritizes the concept of Water Circular Economy, particularly through water reuse and water recycling initiatives. This is implemented through the adoption of water reclamation systems, enabling the reuse of treated wastewater in industrial processes and utility systems. These efforts enhance water use efficiency, reduce wastewater discharge, and minimize environmental impacts. At the same time, enhancing water resilience is also critically important. WHAUP has been developing infrastructure that can cope with climate variability, such as constructing water reservoirs both inside and outside WHA’s industrial estates. These reservoirs serve as backup water sources, thereby reducing dependence on natural water sources such as dams and canals, which are vital to local communities and surrounding ecosystems. Moreover, the Group ensures that its operations do not extract water from water stress areas—regions where water availability is insufficient to meet long-term sustainable use—through thorough assessments and monitoring. Equally important is the promotion of participatory water management. WHAUP encourages collaboration among government agencies, private sector entities, and communities to ensure equitable access to water resources and fair water usage. This approach respects the rights of all stakeholders sharing the same watershed.



3.3 RISK MANAGEMENT

RISK MANAGEMENT POLICY AND FRAMEWORK

WHAUP has established a risk management policy and Enterprise Risk Management Framework, which has been approved by the Board of Directors and is reviewed and updated regularly every year to ensure alignment with changing business context. The Enterprise Risk Management Framework is aligned with the Committee of Sponsoring Organizations of the Treadway Commission (COSO) guidelines, focusing on Enterprise Risk Management (ERM). This framework is also integrated with corporate governance best practices, such as the Thai Corporate Governance Code for Listed Companies – 2017, to support strategic decision-making and management across all business units. In addition, WHAUP focuses on building understanding and risk management capability for the Board of Directors, executives, and employees at all levels. This enables them to assess risk appetite and analyse risk tolerance in business planning and decision-making. Emerging risks are also closely and continuously monitored.

INTEGRATION OF RISK MANAGEMENT CRITERIA INTO THE INVESTMENT DECISION-MAKING PROCESS

WHAUP places great importance on risk management at every stage of its operations, particularly in the investment decision-making process, which is a key driver of sustainable business development. To ensure that each investment project can effectively manage potential risks, WHAUP has integrated risk

management criteria into the decision-making process from the initial stages of planning and product or project development. Risks are assessed across various dimensions, including development costs, percentage increase in interest costs relative to total costs, average interest expenses, net interest-bearing debt to equity ratio (IBD-to-Equity ratio), net interest-bearing debt to earnings before interest, tax, depreciation, and amortization (IBD-to-EBITDA ratio)

WHAUP requires all projects to meet an acceptable risk threshold before any investment decision is made. All investment proposals must be approved by the Risk Management Committee (RMC), which is responsible for evaluating the strategic alignment of the project, identifying potential risks, and assessing the project's ability to generate returns. This process ensures that all investments are supported by sound risk management and contribute to WHAUP's long-term sustainable growth.

ENTERPRISE RISK MANAGEMENT PROCESS

WHAUP has linked the enterprise risk management system with materiality topics and policies, laws, regulations, and standards of WHAUP and WHA Group, covering Environmental, Social, and Governance (ESG) risk management and internal control systems, and compliance or GRC (Governance, Risk and Compliance) to prevent and mitigate risks and reduce the impact of risk factors throughout the organization, enabling the organization to achieve our strategic objectives and main goals in various areas. The organization's risk management process consists of 8 steps as follows:



1. Objective Setting

- Business Context Analysis
- Define Objectives, Organizational Goals align with Strategic Goals
- Define the Risk Appetite



2. Risk Identification

- Identify Risks and Risk Factors, both Internal and External
- Identify risks to cover all types of risks, including strategic risks, operational risks, financial risks, compliance risks, sustainability risks or environmental, social, and governance (ESG) risks, human rights risks, corruption risks, information technology risks, personal data risks, and emerging risk



3. Risk Assessment

- Evaluate Risks by assessing the likelihood of the risk occurring (Likelihood) and the impact of the risk (Impact)
- Apply tools to assess the severity of impacts, such as Sensitivity Analysis and Scenario Analysis



4. Risk Prioritization

- Prioritize risks by ranking their importance
- Create a Risk matrix (4x4) by categorizing the prioritized risks into 4 levels: very high, high, medium, low



5. Risk Response

- Define risk response methods, such as risk acceptance, risk reduction or control, risk avoidance, and risk transfer.
- Mitigate risks to an acceptable level of risk (Risk Appetite) and deviation of the acceptable level of risk (Risk Tolerance)



6. Risk Recording and Reporting

- Risk Register through Corporate Risk Management System (RMTS) application
- Define Key Risk Indicators
- Risk Report



7. Monitoring Review and Improvement

- Review risk and performance results
- Continuously improve Enterprise Risk Management



8. Communication and Consultation

- Prepare risk management policy announcements
- Communicate and provide advice on risk management

CRISIS MANAGEMENT AND BUSINESS CONTINUITY MANAGEMENT

WHAUP conducts Sensitivity Analysis and Stress Testing annually to assess the potential outcomes and impacts of various risk events, particularly Emerging Risks. These assessments inform the development of comprehensive mitigation measures and action plans. Based on WHAUP's 2024 Sensitivity Analysis and Stress Testing results, flooding and drought remain key risks due to the high concentration of customers' industrial plants and warehouses located within industrial estates of WHA. Such events could directly disrupt customer operations. Moreover, WHAUP's utility services are highly dependent on natural resources, such as rainfall and water from natural sources. Consequently, these risks may significantly impact WHAUP's ability to supply water to its customers across a broad area.

Additionally, WHAUP has developed Business Continuity Management (BCM) and Business Continuity Plans (BCP) as part of its risk management system to ensure readiness in responding effectively to emergencies and crises. These plans help ensure that all business units can continue operations smoothly. WHAUP regularly reviews and updates these plans to cover all possible scenarios identified through risk assessments that could cause business disruption, such as floods, droughts, fires, epidemics, and information security threats, through the following key projects:

1. TESTING OF THE BUSINESS CONTINUITY PLAN

WHAUP, together with WHA Group conducts testing of the Business Continuity Plan in simulated scenarios such as chemical leaks, vehicle accidents, and flood prevention. The related processes include:

- Receiving incident alert reports
- Emergency prevention measures
- Coordination and communication
- Use of various tools and equipment
- Assessing the readiness of equipment and response time to emergencies

The test results showed that personnel and relevant departments were able to perform satisfactorily according to the plan's requirements. WHAUP continues to improve and develop procedures to better accommodate future situations.

2. NATURAL DISASTER RISK REDUCTION PROJECTS

To mitigate and reduce risks from natural disasters such as droughts and floods, WHAUP has implemented the following key projects:

- Installation of a rainwater drainage system in industrial estates to manage water during heavy rainfall, with pump operations controlled by an automated system
- Improvement of earthen embankments in flood-prone areas to prevent external water from entering the industrial estates
- Construction of a reservoir near WHA Rayong 36 Industrial Estate, along with water allocation from the Nong Pla Lai reservoir
- Development of water reclamation systems to reduce reliance on natural water sources and mitigate the impact of droughts

3. CYBERSECURITY TESTING

In response to increasing complexity in cyber threats, WHAUP, together with WHA Group, conducts tests to protect data security and recover backup data as follows:

- Data security testing conducted by the Information Technology department
- Testing of disaster recovery and backup media recovery systems, including ERP, File Sharing, and MS SQL Database

The test results showed that data recovery for each system was complete and met the planned objectives. The most recent backup data was selected and used in the recovery process to ensure that the backup data could be read and restored within the estimated and targeted recovery time.



4. DEVELOPMENT OF THE UNIFIED OPERATION CENTER

WHAUP has enhanced the capabilities of its Unified Operation Center (UOC) for the control and management of utility services. At present, WHAUP is able to remotely operate and manage all water and solar power plants through the UOC. Therefore, during emergencies or crises that restrict physical movement, the UOC can serve as a secondary command center, ensuring continued control over water and solar power plants and enabling business operations to proceed without interruption.

RISK MANAGEMENT CULTURE

In addition to establishing a framework for risk management and good corporate governance, WHAUP also emphasizes raising awareness, attitudes, and behaviours related to risk management among at all levels of personnel, including employees, directors, and senior executives. This is considered a key mission of the organization to drive an effective risk management culture within the organization. WHAUP is currently in the process of transitioning to a top-down incentive system by incorporating risk management into the Key Performance Indicators (KPIs) of executives and risk owners. Risk indicators are also included as one of the criteria in performance evaluations.

This approach will promote communication and practices that directly focus on risks and create practical methods for implementing risk management. For example, the use of a common risk language, defining acceptable risk levels, and setting standardized risk assessment criteria across WHAUP and WHA Group. The approach also defines the roles and responsibilities of those accountable for specific risks and ensures that risk management is included in the agenda of key meetings of each subsidiary company. The approach encourages sharing risk management experiences between departments and companies to continuously communicate best practices and benefits. Additionally, risk management is incorporated into the organization’s training curriculum to raise awareness and develop skills among personnel in identifying, controlling, and mitigating risks related to their roles and responsibilities. This includes directors, executives, and employees, ensuring everyone can participate in effective risk management and strengthen the organization’s risk management culture. Furthermore, all employees and external parties can use WHAUP’s whistleblowing and complaint channels to report issues they believe pose a risk or could become a risk in the future. The reports will be investigated, addressed, and appropriate measures will be taken accordingly. (Please consider more details in Code of Conduct and Practices section of this report).

3.4 METRICS AND TARGETS

Materiality And Sustainability Risk Analysis		2024 Target	Performance
 Executives		100%	100%
 Employees		100%	80%
 Partners/Contractors		100%	100%
Training and Workshops on Business Continuity Management (BCM) and Business Impact Analysis (BIA)		2024 Target	Performance
 Business Continuity Management Working Team		100%	100%

To ensure an effective risk management system, WHAUP has established an external audit of risk management system, conducted by KPMG Phoomchai Business Advisory Ltd. at least annually. The external audit of the risk management system in 2024 covered the following topics:

- The organization has defined its objectives clearly and adequate to be able to identify and assess risks related to achieving its objectives.
- The organization comprehensively identifies and analyses all types of risks that may affect the achievement of objectives throughout the organization.
- The organization has assessed the importance of risks by considering both the chance of an event occurring and the impacts that may affect to achieve the objectives of the organization.
- The organization considers the potential for corruption in assessing risks to achieve the objectives of the organization.
- The organization can identify and evaluate changes that may affect the internal control system.
- The organization has implemented measures and action plans to manage risks at an acceptable level.

- The organization has communicated to all employees to understand and follow the policies and guidelines specified.

WHAUP has established clear policies and procedures to ensure that the engagement of external risk management system auditors is conducted independently and without conflicts of interest. During each engagement period, the performance and quality of the auditor’s work are reviewed. Upon the expiration of each contract period, WHAUP initiates a tender process to select a new risk management system auditor with appropriate qualifications and the capability to provide efficient services. This practice helps reinforce confidence in the risk auditing process and ensures that risk management system audits are conducted with transparency and in alignment with WHAUP’s policies and good corporate governance principles.

In addition, WHAUP conducts internal audits of the risk management system through the Internal Audit Office. These audits cover the entire risk management system of WHAUP in accordance with the annual risk management plan. Internal audits are carried out at least once a year, and the audit results are reported to the Audit Committee. The audit results for 2024 are as follows:

Risk Management System Audit	2024 Target	Result
 Risk management system audit conducted by WHAUP’s Internal Audit Unit with no issues found	100%	100%
 Risk management system audit conducted by an external party with no issues found	100%	100%

4. HIGHLIGHT PROJECTS

WHAUP places strong emphasis on risk management and crisis response to prevent potential impacts on business operations and related stakeholders. WHAUP focuses on fostering a risk management culture at all levels of the organization through key activities and projects aimed at raising awareness and encouraging participation from all sectors. This approach enables the organization to manage risks effectively and remain well-prepared for any future scenarios in a careful and sustainable manner. In 2024, WHAUP implemented the following key projects:

TRAINING PROGRAMS AND ACTIVITIES TO PROMOTE A RISK MANAGEMENT CULTURE

WHAUP is committed to conducting business with integrity, fairness, and transparency, ensuring that the operations comply with the law, the Code of Conduct, and good corporate governance principles. This commitment aims to ensure ethical conduct, uphold social and environmental responsibility, and reinforce corporate governance practices. Additionally, WHAUP places great importance on communicating the Code of Conduct and anti-corruption policies to

stakeholders at all levels, ensuring that everyone understands their roles and responsibilities and strictly adheres to the guidelines. Cultivating a strong risk management culture is a priority for WHAUP. WHAUP continuously collaborates with WHA Group to organize training programs and activities that raise awareness and enhance employee capabilities in identifying, controlling, and mitigating risks associated with their duties and responsibilities, as outlined below:

Training Program	Training Content	Training Result
<p>Training on Risk Management under the topic “Materiality and Sustainability Risk Analysis”</p>	<p>The “Materiality and Sustainability Risk Analysis” training program, held on August 15, 2024, focused on enhancing knowledge and skills in identifying and analysing material sustainability issues and ESG-related risks, as well as managing such issues and risks to an acceptable level. The program also covered ESG risk analysis, emerging risks, and effective monitoring. Key topics included:</p> <ul style="list-style-type: none"> • Overview of Risk Management • Risk and Materiality Assessment • ESG and Enterprise Risk • ESG Risk and Sustainability Development • Stakeholder Engagement in ESG • ESG Risk Management 	<p>A total of 548 director, executives and employees, representing 80%, participated in the training. All participants gained knowledge and skills in identifying and analysing material sustainability issues and ESG risks, managing them at acceptable levels, and performing effective ESG risk analysis and monitoring. The training also enhanced awareness among executives and staff about ESG risks and fostered a risk management culture within the organization. This is considered a key foundation for driving the organization toward its long-term sustainable goals, highlighting the importance of prioritizing effective risk management practices.</p>
<p>Workshop on “Business Continuity Management (BCM) and Business Impact Analysis (BIA)” for On-site Operations Personnel and the Business Continuity Management Working Team</p>	<p>The workshop, held on January 11–12, 2024, aimed to build understanding of business continuity requirements and processes to help the organization prepare for, respond to, and recover from disruptions. It covered how to manage incidents, uncertainties, and threats, as well as the impacts of those threats on business operations. The training enabled participants to develop the organization’s capability to manage crises, prevent disruptions, and strengthen resilience in protecting stakeholder interests, reputation, and value-creating activities. It also emphasized the importance of embedding a strong and sustainable risk management culture within the organization.</p>	<p>The Business Continuity Management Working Team was able to effectively conduct the organization’s Business Impact Analysis (BIA) and gained a clear understanding of BCM processes and their respective responsibilities. This will help ensure a complete, efficient, and effective business continuity management system, supporting the organization’s long-term sustainability.</p>
<p>Risk Management Program for Corporate Leaders (RCL)</p>	<p>This program, organized by the Thai Institute of Directors (IOD), aimed to enhance understanding of different types of risks, the role of directors in risk management, and risk management frameworks. It was designed to help non-executive directors effectively oversee risk management within the organization.</p>	<p>The training equipped non-executive directors with knowledge and skills related to organizational risk management and how to apply risk frameworks in strategic decision-making. Further details can be found in the Form 56-1 One Report 2024.</p>



In addition, WHAUP, together with WHA Group, produces communication materials to promote knowledge and understanding, fostering a risk management culture. These materials cover topics such as organizational risk management processes and business continuity management. The aim is to ensure that all employees recognize the importance of risk management and can apply it effectively in their work. It also serves to enhance employees' knowledge and skills in handling risks in various situations. Encouraging participation from employees at all levels helps deepen understanding and readiness to respond to potential risks efficiently, which ultimately contributes to the long-term success and sustainability of the organization.



CORPORATE RISK MANAGEMENT SYSTEM (RMTS)

WHAUP is committed to leveraging its digital expertise to develop and implement various digital innovations that promote an effective risk management culture. Therefore, WHAUP and WHA Group developed the Corporate Risk Management System (RMTS) and began pilot testing it in the third quarter of 2023 to facilitate risk assessment and display the status of all key risks. The system includes alerts, monitoring, and effective

tracking of risk management actions. In 2024, the risk assessment system was further enhanced to improve reporting efficiency by providing customizable Risk Dashboard and Risk Register Reports tailored to user needs. It also supports fast and accurate decision-making by displaying the ranking of the highest priority risks. Looking ahead to 2025, WHAUP and WHA Group plans to further develop the system by adding functions for risk trend analysis and key risk indicators (KRIs) to enable comprehensive and more efficient risk management. These additional features will enhance

the transparency and traceability of risk assessment and management, enabling more data-driven and confident strategic decision-making.

RISK AND SUSTAINABILITY COMMUNICATION PROJECT OF THE BOARD OF DIRECTORS

WHAUP has integrated risk assessment results and sustainability issues into the formulation of organizational direction and strategies. In 2024, the management team presented key risk factors and sustainability-related issues to the Board of Directors as part of the strategic planning process. This information was considered during the corporate strategy meeting, covering both short-term and long-term strategies, held in the fourth quarter of 2024.

5. IMPACTS ON STAKEHOLDERS AND ENVIRONMENT

Risk management is one of the key processes that WHAUP continuously implements to prevent and mitigate potential impacts on the environment and stakeholders. In addition to enhancing business efficiency, effective risk management also builds trust in WHAUP and supports long-term sustainable development.

ENVIRONMENTAL IMPACT

WHAUP is committed to enhancing its risk management processes to minimize environmental impacts. Key initiatives include the installation of automatic stormwater drainage systems in industrial areas, the construction of water reservoirs to manage supply during crisis periods, and the improvement of water reclamation systems. These efforts help reduce reliance on natural water sources and mitigate the effects of drought. WHAUP has also implemented flood prevention measures in high-risk areas to maintain ecological balance and prevent potential damage to surrounding communities.

IMPACT ON STAKEHOLDERS

WHAUP's risk management efforts aim to build confidence among all stakeholder groups, including business partners, investors, local communities, and

government agencies. Notable initiatives include the development of a Business Continuity Plan, which plays a key role in enhancing safety and quality of life for communities in the vicinity. These actions also help strengthen relationships with supplier and customers through transparent and sustainable business practices.

WHAUP remains committed to continuously developing and improving its risk management processes across all dimensions to support sustainable business operations, while meeting stakeholder expectations and long-term environmental goals.

6. COMMITMENT TO FUTURE SUSTAINABILITY

WHAUP recognizes the rapid and continuous changes in the economic, social, environmental, and technological conditions, which present both new opportunities and challenges for business operations in 2024 and beyond. In response, WHAUP places strong on proactive risk management to enable timely adaptation to constantly changing situations. This includes closely monitoring and analysing trends in Environmental, Social, and Governance (ESG) factors, as well as economic developments that may pose both risks and opportunities for the organization.

WHAUP also prioritizes the development of an effective risk management strategy through the analysis of internal organizational factor, to strengthen a flexible and adaptive risk management process that is well-suited to fast-changing environments. At the same time, WHAUP promotes risk management culture within the organization by adopting advanced technologies and innovations to enhance risk response efficiency.

In the future, WHAUP will continue to develop and adopt new technologies such as Big Data and Artificial Intelligence (AI), to support rapid and accurate risk analysis and forecasting especially in assessing risks that may affect operations. This approach aims to strengthen the risk management system and business continuity across all units, enabling the organization to operate smoothly and to its fullest potential.



CUSTOMER RELATIONSHIP MANAGEMENT

1. GLOBAL TREND

Today, businesses face intense competition both in existing and new markets, which are rapidly and continuously changing. The ever-changing behavior of consumers is a crucial factor that organizations must adapt to in order to operate efficiently and grow sustainably. One of the key components of sustainable business development is the customer or consumer. Therefore, companies should place importance on managing customer relationships effectively. The adoption of technology is a vital tool to strengthen strategies for customer relationship management, such as applying automation systems and Artificial Intelligence (AI) technology to increase accuracy and speed in customer service, as well as driving the organization toward the digital era. Additionally, using technology to analyze consumer data, relying on a robust data storage system and creating a data-driven organization, enables companies to maximize the use of insights to develop products and services that appropriately meet customer needs. This also helps enhance resource efficiency, reduce costs, and promote sustainable business operations in the long term.

2. OUR POSITION

WHA Utilities and Power has earned the trust of a diverse range of customers as a leader in utility and power services. Committed to enhancing service efficiency, WHAUP has implemented various

technologies and innovations in 2024 to improve operational speed, accuracy, and reliability. These efforts align with the vision of WHAUP and WHA Group to develop into a Tech and Sustainability Company. To meet changing customer demands and create new business opportunities, WHAUP has developed a collaborative platform that connects customers and other stakeholders. The innovations and technologies adopted not only enhance agility and precision in service delivery but also support sustainable business practices. These include systems for monitoring solar panel performance and efficiency detection devices, analytical tools, automation systems, and various smart devices. Through these innovations, WHAUP effectively meets customer needs, elevates industry standards, and drives the organization toward long-term sustainable growth.

3. MANAGEMENT APPROACH

3.1 GOVERNANCE STRUCTURE

WHAUP prioritizes systematic customer relationship management to ensure that it can effectively meet customer needs. This is supported by a clear organizational structure, with responsibilities divided between two main entities: the Customer Development Department, which handles day-to-day operations, and the Board of Directors, which oversees strategic direction and policy-making.



Roles	Responsibilities
Customer Development Department	The Customer Development Department serves as the primary unit responsible for managing customer relationships. It plays a key role in monitoring and understanding customer needs and issues, using this information to enhance services and develop products that better align with customer expectations. The department also continuously gathers customer feedback to drive improvements. Its operations are guided by strategic plans aimed at effectively responding to customer demands. These efforts include product and service development, establishing efficient communication channels, and enhancing the overall customer experience. All these initiatives are essential in building strong, lasting relationships and trust with customers, reinforcing WHAUP's commitment to attentive and dedicated customer care.
Board of Directors	Board of Directors plays a key role in setting policies and overseeing customer relationship management to ensure alignment with appropriate strategic directions. Emphasis is placed on operations that reflect industry best practices, market trends, and stakeholder expectations. The Board is also responsible for ensuring that the customer relationship management process adheres to corporate governance principles and sustainable business practices. This oversight helps ensure that WHAUP can comprehensively meet customer needs while strengthening the long-term competitiveness.

3.2 RISK AND OPPORTUNITIES MANAGEMENT STRATEGY

WHAUP places great importance on continuously learning and understanding customer needs in order to improve and develop products and services that effectively meet those needs. However, this area of operation still faces both risks and opportunities that the organization must manage in a balanced manner to sustainably create value for customers while also mitigating challenges that may arise from internal and external factors.

Risks	Opportunities
Although WHAUP places great importance on managing customer relationships, if the business processes or customer relationship management systems are ineffective, WHAUP may fail to adequately meet customer needs. Additionally, any service disruptions that impact customers' operations could undermine customer trust and create negative effects on WHAUP's reputation, as well as affect other stakeholders such as customers' employees and the general public who rely on their products and services. Furthermore, current customer behavior trends consider not only price and quality but also emphasize organizations' responsibility toward the environment and society. If WHAUP cannot adapt to these sustainability expectations, customers may choose not to do business with WHAUP, which would affect WHAUP's opportunities for market expansion and long-term business growth.	Effective customer relationship management enables WHAUP to deeply listen to and understand the diverse needs of its customers. These insights can be used to develop products and services that precisely meet customer demands, which not only helps retain the existing customer base but also attracts new customers, promoting continuous business growth. Moreover, the diversity of customer groups presents a significant opportunity to expand the range of new products and services in line with market trends and evolving consumer behaviors. Particularly in an era where customers prioritize sustainability, if WHAUP can develop products and services that consider environmental and social aspects while creating added value for customers, it will strengthen the corporate image and build a competitive advantage for long-term success.

Therefore, WHAUP is committed to continuously monitoring business trends and adapting accordingly to ensure smooth operations, minimize potential risks, and enhance opportunities for long-term business development in collaboration with our customers.

3.3 RISK MANAGEMENT

WHAUP has planned its customer relationship management operations to align with and proactively respond to the continuous changes arising from both the business environment and future technological advancements. The focus is on leveraging technology and innovation in business operations, particularly in managing customer relationships, to strengthen collaboration and expand business opportunities through platforms that connect customers and all stakeholders of WHAUP. Furthermore, the adoption of technology enhances operational efficiency, speed, and reliability while reducing human error. WHAUP places great importance on investing in

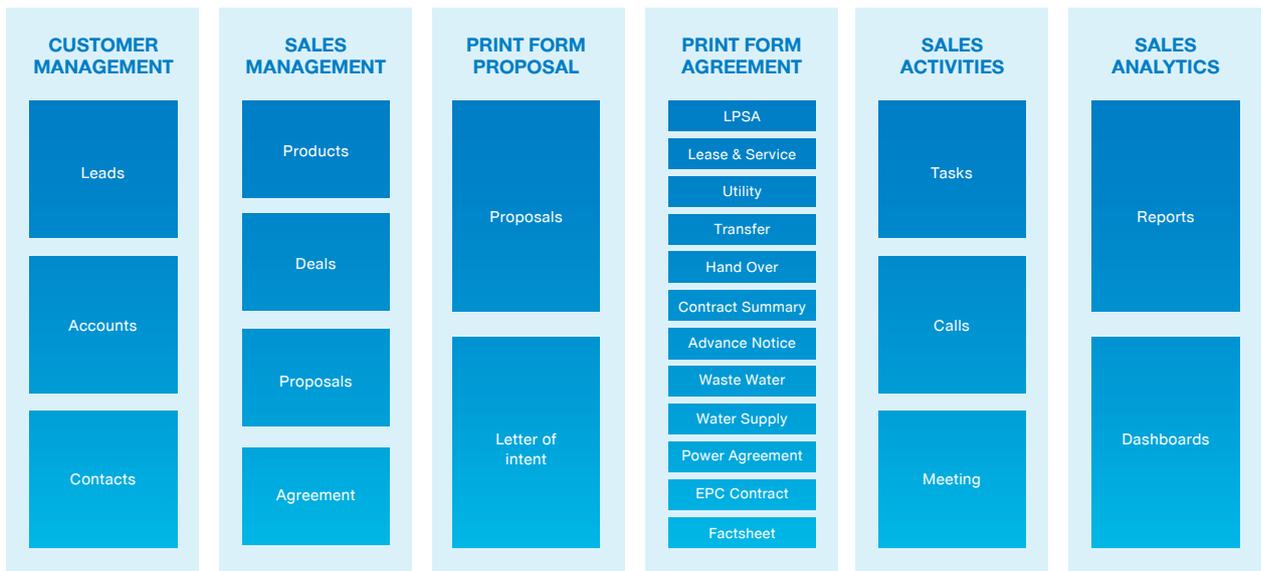
intelligent technologies such as automation systems, 5G technology, Artificial Intelligence (AI), and machine learning to boost business capabilities and reduce long-term costs. In addition, WHAUP has implemented technologies like Solar Anomaly Detection and Solar Forecasting systems to monitor the performance of solar energy production and analyze the data, thereby improving accuracy in optimizing production efficiency and managing solar energy systems. WHAUP has also applied RO Performance Forecasting technology to enhance high-quality water production efficiency, reduce resource costs, and improve water quality control capabilities.



WHAUP is committed to being a business partner that drives customers toward sustainability through comprehensive services under the mission “WHA : WE SHAPE THE FUTURE” of WHA Group. WHAUP operates according to a strategy to deliver high-quality utility and energy products and services that fully meet customer needs through One Stop Service Solutions. WHAUP is the largest provider of industrial water production, sourcing, and distribution-including raw water, process water, and clarified water (chlorine-free water)-to industrial estates in Thailand. In addition, WHAUP offers commercial conventional energy and renewable energy services. WHAUP continues to focus on enhancing service efficiency by continuously improving service quality. WHAUP emphasizes fostering a customer-centric organizational culture, encouraging employees to recognize the importance of customers in order to deliver the best service. Moreover, an effective complaint management system is established to enable customers to easily and quickly report issues and receive prompt resolution. All these operations align with WHAUP’s commitment to being “The Ultimate Solution for Sustainable Growth,” ensuring WHAUP maintains its position as the leading utility and energy business in Thailand.

CUSTOMER RELATIONSHIP MANAGEMENT SYSTEM

To respond to customer needs quickly and efficiently, WHAUP has integrated technology into its Customer Relationship Management (CRM) system, which serves as the foundation for managing customer relationships across the entire WHA Group. By utilizing data resources technology to centralize information storage, employees from various departments can access customer data comprehensively. This facilitates better collaboration among departments by reducing unnecessary communication processes. This system enhances the speed, accuracy, and efficiency of customer relationship management operations, thereby increasing customer satisfaction. The customer relationship management system of WHAUP consists of the following components:



CRM System

CUSTOMER COMMUNICATION

Beyond the sale of products and services, WHAUP places great importance on communication with customers to strengthen good relationships. WHAUP communicates through electronic media such as “WHA E-Connection” and via email, Facebook, LinkedIn, and the website, providing content in Thai, English, Japanese, and Chinese. Additionally, WHAUP collaborates with the WHA Group to publish the WHA Connect quarterly magazine in both Thai and Japanese. This magazine promotes news and activities of WHAUP as well as customer-benefiting events such as training sessions, seminars, and social activities. To enhance communication effectiveness, these channels provide easy access, accurate and complete information, and user-friendly experiences for WHAUP’s customers. In 2024, WHAUP launched the WHASApp application as an additional communication channel for customers. Developed jointly with the WHA Group, this application allows customers to access various information, send messages to WHAUP’s customer service staff, and receive instant notifications of events or activities, enabling faster communication and information access for customers.

In addition, WHAUP also actively listens to customer feedback through two-way communication via other channels, including regular customer visits and conversations by phone, email, and LINE groups. A designated primary contact person is assigned to manage customers in cases of concerns or requests. WHAUP also gathers customer opinions through communication activities such as meetings between representatives of WHAUP and customer company representatives via various clubs, including the WHA Investor Club, the Japanese Club, the Eastern Seaboard Industrial Estate (Rayong) Human Resources



Club (ESIE HR CLUB), the Eastern Seaboard Labor Relation Club (ESLR Club), and the WHA Safety and Environmental Club within the industrial estates and industrial lands of WHA. Feedback is also collected through customer and tenant satisfaction surveys. Moreover, WHAUP has established a comprehensive complaint management system. It accepts feedback and complaints through various communication channels and conducts investigations in accordance with WHAUP's procedures for handling complaints from customers and communities. Upon receiving a complaint, the information is forwarded to the relevant business unit manager, and qualified personnel are appointed to investigate the facts, report findings, document details, and implement corrective measures according to WHAUP's standards. The complaints and the progress of corrective actions are then reported to the Quality Committee during the annual management review meeting.



CUSTOMER SATISFACTION AND CONCERN ASSESSMENT

WHAUP recognizes that building customer trust is a fundamental aspect of effective customer relationship management, which also influences the confidence of other stakeholder groups. Customer trust is a key factor in driving profitability in WHAUP's utilities and energy businesses and serves as a vital strategy for long-term business growth. To evaluate the effectiveness of customer relationship management, WHAUP conducts annual customer satisfaction surveys. In 2024, WHAUP collected customer feedback through the Customer Development Department, which is responsible for gathering and analyzing data. In the event of complaints, the relevant department investigates the root cause and implements preventive measures to avoid recurrence. The results of the surveys are reported during management meetings

to ensure comprehensive and effective complaint resolution and to support adjustments in business strategies for product and service improvement. Customer satisfaction, comments, and complaints are gathered through various communication channels, including telephone, Line, email, the WHASApp application, as well as a structured scoring-based survey. The survey covers satisfaction with service quality and infrastructure, such as utility systems, power services, and the overall quality of WHAUP's utilities and power services.

Based on the results of the 2024 customer satisfaction survey, as well as complaints reported through the communication channels and processes as previously outlined, several areas for improvement have been identified to enhance overall customer satisfaction as follows:

Key Area of Concerns	Mitigation Measures Implemented
Turbidity in process water due to low flow in pipelines during holidays	Activated the water drainage system to flush out turbid water until clear, high-quality water was achieved
Process water pressure falls below 1 bar during certain periods	Switched to a closer water supply pipeline to achieve appropriate pressure levels

WHAUP aims to maintain strong relationships with its customers by expanding channels for close engagement, while also implementing various environmental and social initiatives to support both major and minor customer groups. These initiatives are designed to minimize environmental impacts or pollution resulting from WHAUP's business operations. As a utility and power service provider, WHAUP not only sources, produces, and distributes water to industrial operators within the area, but also provides wastewater treatment services for operators located in the industrial estates of WHA. This wastewater treatment helps prevent odor pollution and the discharge of wastewater into natural water sources. Moreover, it allows treated water to be reused in water production processes, thereby reducing the community's water resource consumption and contributing to sustainability across all sectors. WHAUP offers a range of utility products tailored to meet the needs of customers in WHA's industrial estates and industrial lands, as outlined below:

RAW WATER SOURCING AND DISTRIBUTION

WHAUP provides raw water sourcing and distribution services for operators within WHA's industrial estates. WHAUP sources raw water as an alternative water supply option for industrial users. The key customer segments include the petrochemical industry, Independent Power Producers (IPPs), and the steel industry.

INDUSTRIAL WATER PRODUCTION AND DISTRIBUTION

WHAUP offers industrial water production and distribution services tailored specifically for manufacturing operators. The services are categorized into four main types:

- **Process Water:** This type of industrial water is cleaned through sedimentation and filtration processes, followed by chlorine disinfection, making it suitable for general industrial processes. Major customers include the automotive industry (such as car assembly and parts manufacturers), the food industry, and the electronics industry.

- **Clarified Water:** This water is treated through sedimentation, filtration, and low-concentration chlorination. The chlorine level is significantly reduced before being delivered to customers. This product meets the needs of heavy industries, particularly the petrochemical industry, where chlorine could corrode machinery and equipment.
- **Premium Clarified Water:** A high-quality industrial water product that exceeds the standard characteristics of regular industrial water. It is produced using advanced membrane technology and is primarily supplied to power plant customers. WHAUP launched this service in 2020 at Eastern Seaboard Industrial Estate (Rayong).
- **Demineralized Water:** This is highly purified industrial water from which minerals and ions have been removed. It is used in specific industrial processes such as in power plants, petrochemical, and electronics industries.

WASTEWATER TREATMENT

WHAUP provides comprehensive wastewater treatment services to operators with facilities located in WHA's industrial estates. Customers can be assured that WHAUP treats wastewater in compliance with the standards set by the Ministry of Industry before discharging it into each WHA's industrial estate's central treatment facility. Treated water can either be released into natural water bodies or reused in production processes.



3.4 METRICS AND TARGETS

WHAUP implements projects aimed at enhancing the convenience and safety of its customers, while also supporting their business operations to promote sustainable growth for all stakeholders. To assess the effectiveness of its past performance, WHAUP measures customer satisfaction on a regular basis. For 2024, WHAUP set a customer satisfaction target of at least 97.10 percent, with a long-term goal of achieving 100 percent satisfaction by 2027.

SATISFACTION MEASUREMENT

2021

Satisfied Respondent*

95.27%

2022

Satisfied Respondent*

97.10%

2023

Satisfied Respondent*

96.61%

2024

Satisfied Respondent*

98.1%

TARGET 2025

98.5%

In addition, WHAUP conducted customer interviews to reflect the strong relationships it has built with its clients and to gather feedback for the continuous improvement and development of its operations in the future.



WHAUP INTERVIEWS SHOWCASE POSITIVE CUSTOMER RELATIONSHIPS

BMW MANUFACTURING (THAILAND) CO., LTD. INSTALLATION OF 12,000 SQUARE METER SOLAR ROOFTOP



Mr. Erik Ruge, Managing Director of BMW Group Manufacturing Thailand, expressed his delight in signing the PPA for a 1.5 Megawatt solar rooftop installation on a 12,000 square meter rooftop. This project supports the company's policy to develop environmentally friendly manufacturing processes and reduce carbon emissions.

Meanwhile, BMW Group Manufacturing Thailand recognizes the importance of solar rooftop installations, which not only lower the company's energy costs over their lifespan but also reduce CO2 emissions by over 12,000 tons, aligning with global environmental policies to combat climate change and reduce greenhouse gas emissions.

Mr. Somkiat Masunthasuwun, Chief Executive Officer of WHA Utilities and Power Public Company Limited (WHAUP), revealed that the company has recently signed a PPA with BMW Group Manufacturing Thailand to install a solar rooftop system, generating 1.5 Megawatt of power across a 12,000 square meter rooftop area. The project represents an investment of 40 Million Baht. This initiative is part of WHA Group's renewable energy efforts outside its industrial estates and reinforces WHAUP's expertise in clean energy

solutions, developing innovative energy technologies that align with WHA Group's mission – WHA : WE SHAPE THE FUTURE – fostering sustainable growth opportunities.

Mr. Somkiat added that WHAUP is immensely proud to have been selected by BMW, a company known for its rigorous quality and installation standards. This trust underscores WHAUP's world-class installation capabilities, which will further enhance customer and partner confidence.

This collaboration expands the clean and environmentally friendly energy business, supporting WHA Group's goal to drive sustainable, eco-friendly business practices through WHAUP's solar energy expertise. With a highly experienced team, WHAUP will elevate Thailand's automotive industry to a global level.

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SAHA FARM CO., LTD. ENTERED INTO POWER PURCHASE AGREEMENT FOR 14 SOLAR PROJECTS WITH TOTAL CAPACITY 46.36 MEGAWATT



Ms. Boonyaluk Chotitawan, Director of Saha Farm Company Limited and Golden Line Business Company Limited, said as the fully integrated manufacturer, exporter, and distributor of chicken products for 54 years in the business, we adhere the principles of transparency, purity, cleanliness, and fairness, and recognize the importance of improving environmental conditions. We aim to be a green organization that prioritizes the use of clean energy to maximize production efficiency and energy usage.

Saha Farm Group’s agricultural business encompasses the entire chicken production process, from egg incubation to providing light and heating for chickens, animal feed production, and various production machinery within factories, all of which consume significant amounts of energy. Currently, energy prices tend to rise continuously, and certain power production methods still have environmental impacts. Saha Farm Group has realized these challenges and has begun to promote environmental consciousness within the organization, starting with a focus on energy conservation and maximizing energy consumption efficiency to minimize the environmental impact.

As a result, WHAUP of companies under Saha Farm has collaborated with WHAUP to plan for energy cost reduction and environmental impact mitigation by utilizing solar power, a clean energy source that can be produced all year-round. Covering an area of up to 300 rai at Saha Farm premises, the project encompasses 14 sub-projects with a production capacity of over 700,000 chickens per day. This initiative can potentially reduce energy consumption by about 30% when considering 24-hour operations. In the financial term, this could save over 100 Million Baht annually or approximately 1.6 Billion Baht over 14 years, in addition to reducing greenhouse gas emissions by over 870,000 tons over 25 years.

Finally, Saha Farm Group is confident that the collaboration with WHAUP will serve as a good example of incorporating clean energy technology to support the agriculture industry, reducing reliance on traditional energy sources, leading to long-term cost savings, and contributing to a better future for the planet.

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4. HIGHLIGHT PROJECTS

In 2024, WHAUP fully transitioned into a Tech and Sustainability Company by integrating technology into the development of various projects to enhance the efficiency and convenience of customer operations, as outlined below:

OFFICE SOLUTIONS

WHAUP, together with WHA Group, has built WHA Tower as a premium office building for lease, located on Bangna-Trad Road, a strategic location close to Suvarnabhumi Airport, commercial centers, international schools, and universities. It also serves as a gateway to the Eastern Economic Corridor (EEC). WHA Tower is within a 10-minute walking distance to public transportation, making it convenient for travel by public transit as well as by the Outer Ring Road, Bangkok-Chonburi Motorway, and other major roads.

WHA Tower is environmentally friendly, combining modernity with natural elements. The landscape design includes green spaces both inside and outside the building, with accessible rooftop gardens for building users. Water features are incorporated to help occupants connect with nature (Connection to Environment). Inside the building, the workspaces have a ceiling height of 2.9 meters for openness, along with large triple-glazed windows that provide 70 percent heat insulation, reducing electricity consumption from air conditioning. The design also allows natural light to enter the offices, enhancing the working atmosphere.

LED lighting is installed throughout the building, saving up to 50 percent of electricity. The building uses a chilled water air conditioning system that not only increases user comfort (Thermal Comfort) but also helps save energy. WHA Tower has installed PM2.5 monitoring and air quality control systems to maintain safe levels inside the building, protecting the health of employees, customers, tenants, and users. The building is also equipped with comprehensive facilities.



In addition, WHA Tower provides convenience to employees and building tenants by offering shuttle services to public transportation such as electric trains or nearby shopping malls, which helps reduce energy consumption and greenhouse gas emissions. WHA Tower is designed to accommodate all building users, including people with disabilities and vulnerable groups, by integrating universal design principles to meet diverse needs and create an inclusive environment. Inside the office building, facilities are designed to support all user groups. There are convenience stores and restaurants offering a variety of menus, including fruits and healthy options, allowing employees and tenants easy access to fresh and nutritious food. Using Work Life Solutions principles, the building is designed to provide a flexible working environment that promotes creativity and supports physical health and mental health of everyone who uses the building.

WHAUP and WHA Group considers the quality of life, health, and occupational well-being of employees and tenants by the installation of touchless access control systems, temperature detection systems for individuals entering the building, as well as state-of-the-art security measures including high-standard security devices and surveillance systems that operate 24/7. These security features encompass fire detection systems, license plate recognition systems for vehicle access, and continuous CCTV monitoring. Furthermore, WHA Tower employs quality control measures for factors such as air quality and lighting to ensure they meet continuous standard requirements. The design also focuses on maintaining acoustic comfort by ensuring that the building's system components adhere to established noise standards, preventing sound disturbances that could affect occupants. This approach aims to provide tenants and users to influence cognitive and emotional well-being through a variety of prevention and treatment effort.

SMART ECO Industrial Estates

WHAUP recognizes that many people are connected to our industrial estates, including those working inside factories within the estates, passersby, and surrounding communities. Therefore, WHAUP, together with WHA Group has developed eco-industrial estates to maintain environmental sustainability alongside social growth by

designing projects and establishing systematic measures to preserve and monitor environmental quality, safety, and occupational health. This is aimed at promoting the quality of life and well-being of all people to meet high standards as follows:

BIOPHILIC DESIGN OF INDUSTRIAL ESTATES

WHAUP and WHA Group is committed to designing and constructing eco-industrial estates by integrating natural environments into the estate areas. We have designated green spaces within the industrial estates, which not only benefit those working or residing inside the estates by providing usable green areas but also help control environmental quality for the benefit of surrounding communities. In 2024, WHA Group received a total of seven Eco Industrial Estate awards at the Eco Innovation Forum 2024, including five “Eco-Champion” awards, one “Eco-Excellence” award, and one “Eco-World Class” award. These awards reflect WHAUP’s commitment to sustainability through the application of innovative technologies to address environmental issues and enhance the quality of life for users and residents around the estates.

AIR QUALITY CONTROL

WHAUP conducts regular air quality monitoring in the vicinity of the industrial estates and surrounding communities at least twice a year within a radius



of 5 kilometers. The measurements include Total Suspended Particulates (TSP), Particulate Matter with a diameter not exceeding 10 microns (PM10), Particulate Matter with a diameter not exceeding 2.5 microns (PM2.5), Nitrogen Oxides (NOx), and Sulfur Dioxide (SO2). In addition to the regular monitoring, WHAUP has established an automated Air Quality Monitoring Station (AQMS) that continuously monitors air quality and meteorological data in the industrial estates. The AQMS provides real-time data and sends the results to the Environmental Monitoring and Control Center (EMCC), which serves as an environmental surveillance and control center. The collected air quality data mentioned above is reported to relevant government agencies such as the Ministry of Natural Resources and Environment, the Industrial Estate Authority of Thailand, and the Office of Natural Resources and Environmental Policy and Planning. These reports are part of the Environmental Impact Assessment (EIA) Monitoring Report, which is submitted twice a year. In 2024, WHAUP and WHA Group has successfully achieved the targets set in the Environmental Impact Assessment (EIA) evaluation. The air quality indicators in the general atmosphere are within the specified standards.

WATER QUALITY CONTROL WITHIN THE BUILDING AND INDUSTRIAL ESTATE

WHAUP places great importance on access to quality utilities, particularly clean water, which can directly impact the health of users. WHAUP actively monitors and controls water quality within the WHA Tower office building and WHA’s industrial estates to ensure that all relevant stakeholders-including WHAUP employees and area users-have equitable access to clean water resources. WHAUP conducts daily testing of raw water and product water quality, with monthly summaries of the results. In addition, WHAUP collaborates in implementing water usage control projects within the industrial estates, aligned with the water consumption targets set for WHA’s buildings and operational areas.

WHA CUSTOMER CLUB

With a commitment to close interaction with customers to better understand their interests and concerns, WHA Group and WHAUP has established various customer clubs as additional channels for communication. The outstanding customer clubs in 2024 are as follows:

1. WHA Investor Club



The WHA Investor Club is an open club for all customers within WHA’s industrial estates, who are also customers of WHAUP. Members receive monthly or quarterly newsletters and invitations to participate in various seminars and training sessions. In 2024, WHAUP organized three seminars for the club members as follows:

- Cyber Risk Landscape: Understand your exposure and key consideration for Manufacturer by Marsh Thailand Marsh
- KPMG in Thailand: Accounting, Legal, and Tax Updates
- The Path to Net Zero focused on Smart Energy Strategies for Industry 5.0, emphasizing energy efficiency and the transition to renewable energy, held at Eastern Seaboard Industrial Estate (Rayong) and WHA Saraburi Industrial Land



2. The Japanese Executive Club (Japanese Club)



established 25 years ago in 2000 and currently has 150 member Japanese companies operating in the industrial estates of WHA in Chonburi and Rayong Province. The club holds monthly meetings at the office at Eastern Seaboard Industrial Estate (Rayong). In 2014, WHAUP established the Japanese Executive Club at WHA Saraburi Industrial Land, which now has 22 member Japanese companies. This club holds meetings every two months at the office at WHA Saraburi Industrial Land to exchange information on topics such as legal changes, factory management, new laws related to operations in Thailand, wages, employee benefits, waste management, and energy production from waste. The club also serves as a networking channel for Japanese executives working in the industrial estates of WHA.

3. Eastern Seaboard Industrial Estate (Rayong) Human Resources Club (ESIE HR Club)



1997 with members consisting of HR managers and personnel officers. The club was founded to serve as a central platform for exchanging information related to human resources, such as labor laws, employee benefits, and wages, as well as to build a network of alliances among members. Additionally, the club organizes social responsibility activities and internal events to encourage members to participate together. Currently, the club has members from over 200 companies in the industrial estates of WHA. Monthly meetings are held regularly at the conference room of the office at Eastern Seaboard Industrial Estate (Rayong) to exchange information about labor laws and updates beneficial to human resource management, along with training programs conducted by expert speakers specializing in human resource management.

4. Eastern Seaboard Labor Relation Club (ESLR Club)



Established in 2005, the club currently has members who are HR managers from 100 companies within the industrial estates of WHA. These members are interested in exchanging information on labor union management. The club serves as an information center on labor issues for members seeking knowledge about labor unions, regulations, and provides support or advice regarding labor dispute resolutions or other matters related to labor agreements. The club holds monthly meetings at the conference room of WHA Training Center, ESIE Plaza 1, Eastern Seaboard Industrial Estate (Rayong) to accurately and comprehensively communicate information to the members.

5. WHA Safety and Environmental Club within the industrial estates and industrial lands of WHA (WHA Safety and Environmental Club)



Collaboration between WHAUP, WHA Group, and the Industrial Estate Authority of Thailand, with representatives or personnel responsible for safety and environmental matters from establishments within the 12 industrial estates and industrial lands of WHA in Chonburi, Rayong, and Saraburi Province as members of the club. The club's purpose is to provide knowledge and exchange information regarding regulations and laws, as well as to carry out Corporate Social Responsibility (CSR) activities. Each industrial estate and industrial land of WHA holds at least three meetings per year, and organizes various safety and environmental activities in the industrial factories. These efforts aim to promote effective management systems for safety and environmental standards while fostering good relationships between agencies and the communities surrounding WHA's industrial estates and lands.



WHA Group and WHAUP recognizes that transportation activities across various businesses inevitably cause environmental pollution. Therefore, to support WHAUP’s customers in operating their businesses on a sustainable basis while minimizing environmental impact, WHAUP has collaborated with business partners to develop Thailand’s first Green Logistics solution under the concept of “Driving Sustainability in Motion.” WHAUP has applied advanced innovations to cover every aspect of the electric commercial vehicle value chain to strengthen a comprehensive Electric Vehicle (EV) ecosystem. Mobilix helps customers efficiently manage transportation through electric vehicles with three main services: Electric Vehicle Rental Service, On-Premise and Public EV Charging Solutions-which provide chargers and related equipment for both personal and commercial electric vehicles-and the Mobilix Software Solution, an intelligent digital platform for managing electric vehicles and batteries via the “Mobilix” application. Equipped with advanced workflow management systems, Mobilix handles transportation system management, vehicle maintenance, and optimizes transportation routes to minimize energy consumption. This project is regarded as a revolutionary step toward sustainable transportation, effectively reducing greenhouse gas emissions, enhancing customers’ transportation capabilities, lowering costs, and driving their business growth responsibly with sustainability-focused practices

that emphasize environmental and social responsibility.

WHA Group and WHAUP launched Mobilix in 2024 and received very positive feedback from customers, providing electric vehicle rentals with a fleet of 318 cars and constructing 9 charging stations with a total capacity of over 13,680 kilowatts. In 2025, WHAUP established its fifth business unit under the name WHA Mobility, with a strategy to continuously strengthen and modernize the business to fully meet customer needs and promote long-term sustainable growth.

WHASApp APPLICATION

In 2024, WHAUP and WHA Group developed the WHASApp application for customers in both Thailand and Vietnam. Through the app, customers can access various services, including contacting customer service via messages for assistance, receiving broadcast notifications for updates, events, or activities, and exploring virtual 360° tours across all WHA’s premises. Customers can also access important information through the app, such as contract details, insights into utility and solar energy usage, payment status, and various billing documents. This application enhances customer convenience in communicating with WHAUP, allowing timely access to information and support via their phones, enabling smooth and efficient business operations. It is another way to help improve customer



experience and satisfaction in doing business with WHAUP. In the past year, the app had 1,257 users. WHAUP aims to increase the number of users to 4,000 users in 2025 and 50,000 users by 2029.

5. IMPACTS ON STAKEHOLDERS AND ENVIRONMENT

WHAUP places great importance on its customers, recognizing them as key stakeholders who support the sustainable operation of WHAUP's business. Therefore, WHAUP is committed to managing customer relationships efficiently to comprehensively meet customers' needs in utilities and power services, as well as to retain existing customers and expand the customer base. To facilitate customers, WHAUP implements projects that apply various technologies and innovations to enhance customers' business capabilities, alongside developing their environmental performance. Examples include wastewater treatment projects before discharge into natural sources and water reuse initiatives to reduce water resource consumption, which help alleviate water scarcity



issues in surrounding communities. These efforts not only generate positive environmental impacts but also effectively support customers' sustainable business growth. Furthermore, WHAUP firmly believes that good customer relationship management serves as a fundamental foundation for the long-term sustainability of both WHAUP's and customers' businesses in terms of financial performance, social responsibility, and environmental stewardship.

6. NEXT STEP

WHAUP has planned to sustainably develop the organization while preserving its core competency as a problem-solving partner and trusted ally for customers. In 2025, WHAUP is committed to increasing customer satisfaction to 98.5%, with a long-term target of 100% by 2027. This will be achieved by leveraging technology and innovation to provide customers with greater convenience in terms of speed, accuracy, and safety, aligned with WHAUP's goal of becoming a fully Tech-Driven Organization.

WHAUP also plans to implement new strategies to respond effectively to customer needs while maintaining a customer-centric organizational culture and emphasizing timely problem resolution. To this end, WHAUP intends to enhance its complaint management system to be more efficient and provide more diverse channels for customers to submit complaints easily and promptly. Additionally, WHAUP will improve communication channels via the WHASApp application to increase its efficiency and user-friendliness, aiming for 4,000 users in 2025 and a long-term goal of 50,000 users by 2029.



SUPPLY CHAIN MANAGEMENT

1. GLOBAL TREND

In today's global landscape, business supply chains are becoming increasingly complex, driven by economic volatility stemming from factors such as inflation, energy crises, and prolonged geopolitical tensions. These dynamics have compelled many organizations to adopt more structured and strategic supply chain management approaches to enhance resilience and adaptability across all circumstances. This comprehensive approach spans the management of raw materials, inventory, and logistics planning covering both physical goods and human resources to ensure timely and efficient delivery of products and services. Moreover, as industries navigate the digital transformation era, the integration of advanced technologies and innovations into supply chain operations has emerged as a key strategy which strengthens organizational agility and long-term sustainability in the face of ongoing change.

These trends have driven companies to increasingly adopt technologies that enable more comprehensive and rapid supply chain management. Additionally, leading organizations around the world are integrating sustainability with environmental, social, and governance (ESG) factors into their business operations

across the entire value chain. This approach, known as Sustainable Supply Chain Management. With this management, companies can enhance opportunities, mitigate risks, and strengthen their competitive advantage. Moreover, this practice sets a precedent and encourages other business partners such as product and service suppliers to recognize the importance of sustainability and conduct their operations with greater responsibility.

2. OUR POSITION

As a provider of utilities and power services, WHAUP recognizes that long-term business success must go hand in hand with sustainable development. Integrating principles of business ethics, environmental stewardship, health, safety, and social responsibility into procurement processes is a key strategy for strengthening supply chain resilience. We also committed to advancing digital infrastructure to effectively respond to evolving technologies and global market trends. The application of technology not only enhances operational efficiency but also serves as a critical driver in improving competitiveness and supporting our efforts to achieve stable and sustainable growth across all dimensions.



WHAUP plays a key role in supporting WHA Group’s transformation into a full-fledged Tech and Sustainability Company by 2024. To achieve this, WHAUP has continuously adopted advanced technologies and tools to enhance efficiency, transparency, and agility in procurement operations. One of the core systems that WHAUP has implemented is the Corporate Procurement Management System (CPRS), which streamlines procurement processes across various functions including vendor sourcing, new vendor registration, vendor evaluation, and end-to-end online procurement ensuring greater operational consistency and transparency.

In 2024, WHAUP also adopted the Procurement Yoda system, a tool powered by Generative AI, to enhance the efficiency of procurement operations. This system is designed to respond to queries related to procurement processes, track the status of Purchase Requisitions (PR) and Purchase Orders (PO), and provide analytical insights through the Procurement Dashboard using Power BI. These capabilities enable more effective data management and strategic procurement planning. WHAUP’s commitment to sustainable business practices generates positive

impacts across environmental, social, governance, economic, and human rights dimensions for its stakeholders as well as help elevating the capabilities of our suppliers to grow together with WHAUP and WHA group in the long run and sustainable.

3 GOVERNANCE STRUCTURE
3.1 RISK AND OPPORTUNITIES
MANAGEMENT STRATEGY

WHAUP recognizes the importance of supply chain management with the principles of transparency, fairness, and accountability to all stakeholders. We align our operations with sustainable development principles and to create a balanced creation of shared value between the business and stakeholders. WHA assigned procurement department responsible for managing suppliers and the supply chain in a systematic manner and in accordance with ESG practices. This department reports directly to the Chief Financial Officer (CFO), who oversees and manages the department operations. While the CFO reports to the Board of Directors to ensure that all aspects of business operations adhere to good corporate governance principles and support WHAUP’s long-term stability and sustainability.

Roles	Responsibilities
Chief Financial Officer	Responsible for managing and supervising the procurement department to ensure systematic and efficient operations in line with ESG practices, focusing on developing a supply chain that is transparent, fair, and accountable to all stakeholder groups. This includes establishing guidelines and strategies for managing risks related to the supply chain to ensure that WHA Group’s operations can sustainably adapt to environmental, social, and governance challenges and changes.
Board of Directors	The Board of Directors is responsible for overseeing and setting policies for WHAUP’s supply chain management in accordance with good governance principles. This includes monitoring and reviewing operations to ensure the organization’s supply chain is transparent, ethical, and capable of managing risks appropriately. In addition, the Board of Directors also supports the development of strategies and measures that enhance the Company’s long-term stability and sustainability. The Board also promotes the continuous improvement and refinement of policies to ensure alignment with international standards and ESG requirements, as well as with the broader operational framework of the WHA Group.

SUPPLIER CODE OF CONDUCT

WHAUP has developed a Supplier Code of Conduct and implemented across all business units, to ensure that both existing and new suppliers and contractors are aware of our objectives and approach to sustainable supply chain management. The content of the Supplier Code of Conduct covers three key sustainability topics as follows:

1. Business Ethics
2. Basic Understanding of Human Rights
3. Occupational Health, Safety, and Working Environment

WHAUP has distributed the Supplier Code of Conduct to all suppliers and contractors for acknowledgment and signature agreeing to comply with this code of conduct. In addition, we conduct annual training sessions for all suppliers and contractors including procurement personnel to raise awareness and ensure effective implementation and management of a sustainable supply chain. (The Supplier Code of Conduct can be accessed here)

3.2 RISK AND OPPORTUNITIES MANAGEMENT STRATEGY

WHAUP recognizes the critical role of business operations conducted by partners as a key factor in ensuring business continuity and competitiveness, particularly in the utilities and power sector within industrial estates, which require the integration of multiple sectors such as water management, electricity, and effective waste disposal. Therefore, we place importance on thorough supply chain governance to assess risks and opportunities related to environmental, social, and governance (ESG) aspects.

Risks	Opportunities
<p>Ineffective or substandard supply chain management may adversely impact our operations which may include delays in the procurement of essential materials, equipment, or services required for various projects, as well as risks related to energy shortages, which could affect our ability to deliver quality services or result in regulatory risks concerning the provision of public utilities. In addition, the inability to control the environmental and social standards of business partners may lead to stakeholder complaints, damage the reputation, and result in increased long-term costs, ultimately reducing the Company's competitiveness.</p>	<p>Effective supply chain management in the utilities and power sector enhances business resilience and adaptability. This includes reducing the cost of procuring energy and materials, streamlining operational processes, and selecting partners who adhere to strong sustainability and ethical standard would mitigate environmental and social risks. As a result, WHAUP can deliver efficient and sustainable services over the long term, while simultaneously creating business value and supporting communities within industrial estates.</p>

Therefore, WHAUP must establish an effective supply chain management system, starting from the selection of suppliers with strong sustainability performance, risk assessments, and the identification of critical suppliers, to the evaluation of supplier performance. This is to ensure that the operations of suppliers throughout the supply chain are aligned with the sustainable business practices that WHAUP and WHA Group have consistently upheld.

3.3 RISK MANAGEMENT NEW SUPPLIER SELECTION PROCESS

WHAUP adopts an approach to selecting new suppliers that aligns with sustainable development principles. The selection process goes beyond compliance with laws and regulations to also consider product quality, employee safety, and the supplier's social and environmental responsibility. This ensures that partnerships with suppliers are sustainable and mutually beneficial in the long term.

WHAUP sets criteria such as product and service quality, transparency and fairness in business practices, environmental considerations, and social impacts to assess the potential of current suppliers and source and select new suppliers to grow together throughout

the supply chain from sourcing raw materials to delivering products to consumers. In the process of selecting new suppliers, WHAUP requires that all new suppliers complete a Pre-Qualification Form (PQ) which includes questions to assess qualifications in quality, price, production and service capabilities, management systems, and sustainable potential (environmental, social, and governance: ESG). Furthermore, the PQ also includes the protection of all form anti-bribery and corruption assessment to ensure that business partners conduct business ethically and transparently.

In 2024, a total of 91 new suppliers have undergone the assessment through established processes. It was determined that every new supplier had the potential

and met the sustainability criteria. To foster basic relationships, WHAUP values supplier treatment depending on the conditions in the contracts and sets the average credit term at 30-45 days, depending on the mutually agreed terms and conditions between WHAUP and the suppliers. With the actual average time taken to settle debts with suppliers, we effectively manage our cash flow and have no difficulties in paying its suppliers. Consequently, the credit term conditions are typically met without any issues.

SUPPLY CHAIN RISK MANAGEMENT



CRITICAL SUPPLIER IDENTIFICATION

Fluctuations and disruptions in the supply of products and services can significantly impact business operations and may potentially lead to severe interruptions. Therefore, WHAUP has established a process to review and identify critical suppliers to ensure continuous procurement of products and services and the smooth operation of business. Selecting the right suppliers is a key factor in enhancing business stability and sustainability. We apply supplier selection criteria based on their importance to the business, taking into consideration the annual expenditure, the criticality of the products or services provided, as well as the availability of alternative suppliers.

In 2024, WHAUP conducted a comprehensive review and identified all key suppliers, categorizing them into Critical Tier 1 Suppliers and Critical Non-Tier 1 Suppliers, as presented in the table below.

SUPPLIER ANALYSIS AND CRITICAL SUPPLIER IDENTIFICATION

Supplier Analysis	Number of Suppliers
Total supplier in 2024	246
Critical Tier 1 Supplier	12
Critical non-Tier 1 Supplier	2

SUPPLIER RISK ASSESSMENT (ENVIRONMENTAL, SOCIAL, AND GOVERNANCE ASPECTS)

As part of WHAUP’s efforts to govern our supply chain towards sustainable development, WHA Group conducts risk assessments of our suppliers’ business operations, covering potential environmental and social impacts. The assessment utilizes a Supplier Risk Assessment Form focusing on sustainability (ESG) risks that could affect WHAUP, with particular attention to issues such as fraud, corruption, and ethical business conduct.

The assessment process incorporates ESG-related criteria and considers various risk dimensions, including Country-Specific Risk, Sector-Specific Risk, and Commodity-Specific Risk. In 2024, WHAUP set a target to assess 100% of our suppliers. This includes a target of 100% assessment for high-risk non-Tier 1 suppliers. WHAUP successfully achieved these targets, and the results of the assessment are presented in the table below.

HIGH RISK SUPPLIER

Supplier Analysis	Number of Suppliers
Total Supplier in 2024	246
High Risk Supplier	35
High Risk Non-Tier 1 Supplier	2

Critical Suppliers and High-risk Suppliers are classified as Significant Suppliers. In 2024, there were 47 Significant Tier-1 Suppliers, and 2 Significant Non-Tier 1 Suppliers.

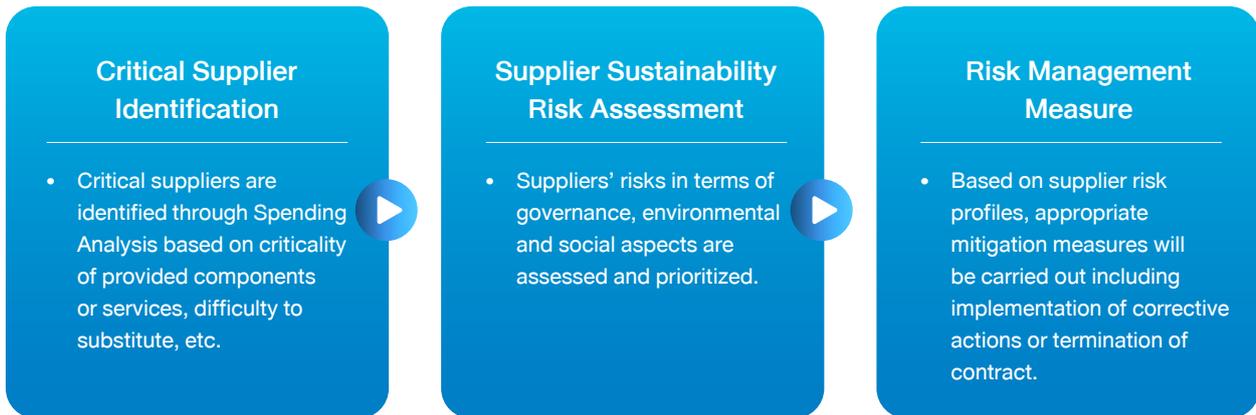
EVALUATION OF SUPPLIER PERFORMANCE

WHAUP has established a follow-up and evaluation system to assess the performance of Tier-1 Suppliers, and Critical Non-Tier 1 Suppliers. The assessment of suppliers is conducted regularly and divided into two categories:

1. The desktop assessment after delivery focuses on the quality of the product or service, price, on time

2. The on-site audit to assess the qualifications and performance of Critical Tier-1 Suppliers, High-risk Suppliers, and Critical Suppliers and High-risk Non-Tier 1 Suppliers in relation to business ethics, environment, health, safety, and social management. It also ensures compliance with business ethics and risk prevention processes. This assessment references recognized management standards such as ISO 9001, ISO 14001 along with Thai labour standards and relevant laws.

From the on-site assessment results of Significant Suppliers. In 2024, there are 12 Critical Tier-1 Suppliers and 35 High-risk Suppliers and no case of nonconformity required a corrective plan from 100% of this suppliers group. For the Significant Non-Tier 1 Suppliers, including 2 Critical Non-Tier 1 Suppliers, and High-risk Non-Tier 1 Suppliers, totalling 100%, no suppliers found nonconformity requiring a corrective plan as well.



CORPORATE PROCUREMENT MANAGEMENT SYSTEM (CPRS)

To enhance supply chain management operations, WHAUP has integrated technology into its operations through the Corporate Procurement Management System (CPRS) to manage online procurement activities. This system is an operational program that facilitates convenient, rapid, and agile communication between the Company and its suppliers. It also promotes transparency, reduces delays, and minimizes documentation errors effectively. Furthermore, it streamlines the project bidding process by allowing qualified suppliers to upload their quotations securely and conveniently via the program's E-Bidding system. Authorized personnel, based on contract value, are then responsible for approving the quotations. The program also features functions that allow users to assess supplier qualifications, evaluate sustainability potential (ESG), and manage the supplier list within the system, thereby enabling the project bidding process to proceed automatically.

In addition, the system integrates sustainable supply chain management principles into operational processes appropriately for example, through the online supplier assessment (Pre-Qualification Form: PQ) for evaluating new suppliers, site visits, and third-party verification. These assessments cover performance in areas of business

ethics, environmental management, health, safety, and social responsibility. This channel enhances efficiency and speed and ensures transparency in the supplier selection process. It can also be used for annual performance evaluations of existing suppliers. Furthermore, WHAUP organizes training sessions to develop suppliers' sustainability capabilities and provides technical support programs to promote their capacity and performance in environmental, social, and governance (ESG) aspects particularly for those suppliers facing challenges in these areas.

In 2024, WHAUP with WHA Group further developed the system in Phase 2 by adding supply chain management capabilities using Power BI, aiming to enable data analysis and reporting through the Procurement Dashboard. Additionally, on October 25, 2024, WHAUP also conducted online training for suppliers on using the CPRS system, including supplier registration procedures, ESG verification, workplace safety, and raising awareness of information security.

SUPPLIER CAPACITY BUILDING

Supplier capacity building is a part of Sustainable Supply Chain. Therefore, WHAUP believes that sharing knowledge is the starting point for developing sustainable suppliers allying with Supplier capacity building goal. Therefore, to achieve sustainable development outcomes, WHAUP collaborate with WHA Group to develop the capabilities of suppliers and contractors in sustainability. These projects aim to raise awareness, provide in-depth technical development for target groups, and provide guidance on system adjustments to address gaps identified during the assessments.



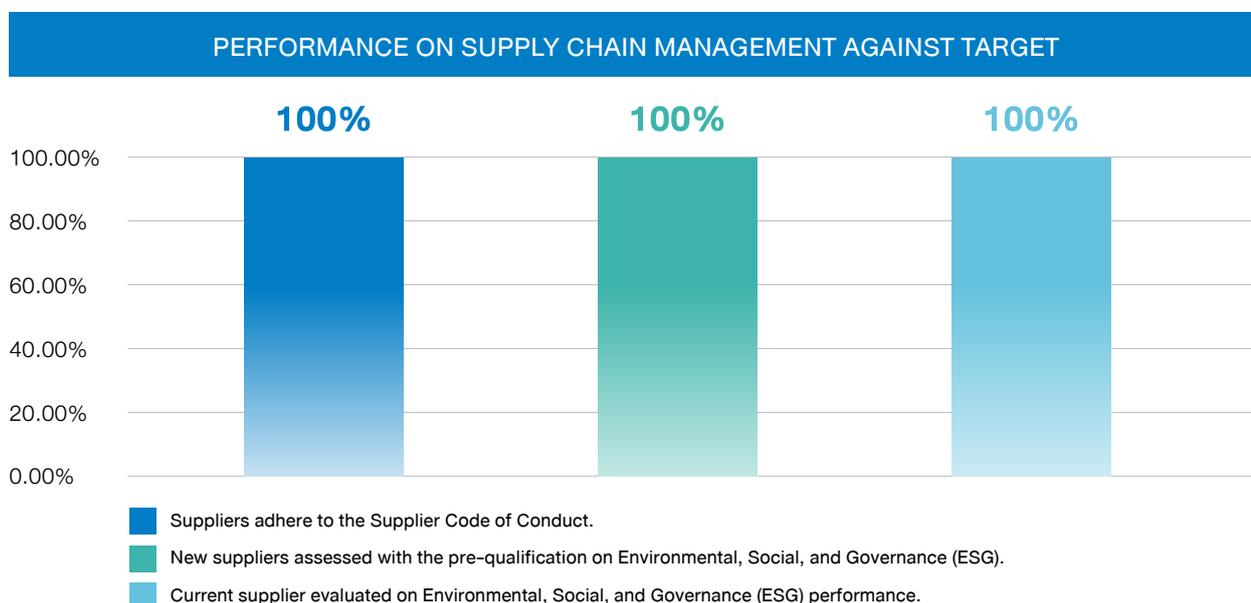
3.4 METRICS AND TARGETS

SUPPLY CHAIN TARGET

100% of Suppliers adhere to the Supplier Code of Conduct.

100% of new suppliers assessed with the pre-qualification on Environmental, Social, and Governance (ESG) factors.

100% of current suppliers evaluated on Environmental, Social, and Governance (ESG) performance.



COVERAGE AND PROGRESS OF SUPPLIER ASSESSMENT PROGRAM

	Performance 2024	Target 2024
Total number of suppliers assessed via desk assessments/on-site assessments	47	47
% of significant suppliers assessed	100%	100%
Number of suppliers assessed with substantial actual/potential negative impacts	0	0
% of suppliers with substantial actual/potential negative impacts with agreed corrective action/improvement plan	0	0
Number of suppliers with substantial actual/potential negative impacts that were terminated	0	0

COVERAGE AND PROGRESS OF SUPPLIERS WITH CORRECTIVE ACTION PLANS

	Performance 2024	Target 2024
Total number of suppliers supported in corrective action plan implementation	0	0
% of suppliers assessed with substantial actual/potential negative impacts supported in corrective action plan implementation	0	0

COVERAGE AND PROGRESS OF SUPPLIERS IN CAPACITY BUILDING PROGRAMS

	Performance 2024	Target 2024
Total number of suppliers in capacity building programs	47	47
% of significant suppliers in capacity building programs	100%	100%

4. HIGHLIGHT PROJECTS

TRAINING ON BUSINESS OPERATIONS WITH REGARD TO ENVIRONMENTAL, SOCIAL, AND CORPORATE GOVERNANCE (ESG) AND WHA'S SUPPLIER CODE OF CONDUCT

WHAUP is committed to enhancing the business capabilities of our suppliers to achieve sustainable growth. In collaboration with WHA Group, we organized activities to promote and support supplier operations through the event “Training on Environmental, Social, and Governance (ESG) Practices and the WHA Group’s Supplier Code of Conduct.” The event, titled “WHA Supplier Day 2024,” is scheduled to take place on 11 March 2025. A total of 74 suppliers have been invited to attend in person, with an additional 606 suppliers invited to join online. It is expected that 100% of the participants in this training will be Significant Suppliers.



Supplier Day on 11 March 2025 at Town Hall 24 floor

เวลา	เรื่อง
13.00 – 13.30 น.	ลงทะเบียน
13.30 – 13.45 น.	กล่าวต้อนรับโดย คุณณัฐพรพร ทັນบุญเอก (ประธานเจ้าหน้าที่การเงินกลุ่ม บริษัท สัมปทิวเฮลธ คอร์ปอเรชั่น จำกัด (มหาชน))
13.45 – 14.30 น.	Artificial Intelligence (AI) บรรยายโดย คุณพัชรินทร์ ทองอารีชัย (ผู้เชี่ยวชาญด้านการนำเทคโนโลยีสู่สวนเทคโนโลยี)
14.30 – 15.00 น.	Anti-Corruption (CAC), Code of Conduct บรรยายโดย คุณณัฐวิภา แพร่งพิริย
15.00 – 15.15 น.	พักรับประทานอาหารว่าง
15.15 – 16.00 น.	การเปลี่ยนแปลงสภาพภูมิอากาศ Climate change บรรยายโดยคุณณัฐพรชด เขียวพฤกษ์ ผู้เชี่ยวชาญ จาก Creagy
16.00 – 17.00 น.	พิธีมอบโล่รางวัลและประกาศเกียรติบัตร

In addition, WHAUP communicated the above information to other suppliers by distributing a recorded training video (Record) on Environmental, Social, and Governance (ESG) practices and Supplier Code of Conduct to all suppliers. The Supplier Code of Conduct covers key topics such as conducting business with good governance, respecting the human rights of all stakeholders, workplace safety, environmental practices, and biodiversity, among others.



SUPPLIER DAY

WHAUP and WHA Group together organized the WHA Supplier Day 2024 event on March 11, 2025, as part of our sustainable supply chain management efforts. The event was officially opened by Mr. Natthapatt Tanboon-ek, Chief Financial Officer of WHA Corporation Public Company Limited. More than 500 suppliers participated, both onsite at WHA Tower and online

This activity reflects our commitment to conducting business in line with ESG policy through the communication of policy directions and business practices, aiming to guide suppliers toward aligning their sustainability operations with a focus on environmental, social, and governance responsibilities as WHAUP practices. In addition, we communicated the concept of Circular Economy, encouraging suppliers to adopt more environmentally conscious practices and to jointly promote circular economy

initiatives. WHAUP also conveyed its sustainability goals, including the adoption of electric vehicles (EVs) to reduce greenhouse gas emissions and efforts to reduce waste and construction waste.

The WHA Supplier Day event emphasized sustainable business operations and organizational development. As part of the event, eight outstanding suppliers were selected from the group of Significant Vendors to receive recognition awards. These suppliers achieved ESG assessment scores of over 90%, in accordance with the SMETA Standard. The awards aimed to encourage suppliers to recognize the importance of sustainable business practices and to continue improving their operational performance. The awarded supplier is SSN SYSTEM ENGINEERING CO., LTD.

Additionally, certificates were presented to more than 70 suppliers who have demonstrated a strong commitment to environmental and social responsibility, and who uphold good governance for the benefit of all stakeholders. This initiative aims to support these suppliers in growing sustainably alongside WHAUP.



IN-HOUSE TRAINING FOR SUPPLIER

WHAUP together with WHA Group organized a training session for suppliers on January 24, 2025, regarding occupational health and safety procedures, work process, and the registration for suppliers in the online procurement system (CPRS) with WHA Group.



IN-DEPTH TECHNICAL TRAINING

In 2024, WHAUP in collaboration with WHA Group, organized in-depth technical training sessions aimed at enhancing suppliers' operational capabilities to comply with legal requirements, relevant standards, and WHAUP internal standards. These technical trainings also help mitigate potential operational risks posed by suppliers. The trainings conducted include the following:

- 1. Cybersecurity Training:** Information Technology department was assigned to organize a cybersecurity training session on 25 October 2024, with a total of 136 suppliers participating. The session focused on raising awareness about information security. Post-training assessments showed that 35 suppliers demonstrated a 92.57% improvement in their cybersecurity knowledge.
- 2. Safety Training:** The training was divided into two key topics: General Safety and Process Safety for contractors operating within WHA Group's production areas. The Safety Department conducted the session on 16 January 2024, with a total of 150 suppliers participating. We issued safety training certificates to all 150 suppliers who successfully completed the course. To ensure workplace safety and compliance, we requires verification of safety training certificates prior to contractors entering the premises, thereby ensuring that all suppliers possess the necessary knowledge and capability to operate safely and minimize the risk of workplace accidents.

PROCUREMENT STAFF TRAINING PROGRAM

WHA Group provides monthly training sessions for procurement personnel. Most recently, a training was conducted on the topics of “Generative AI” and “ESG DNA” on December 3, 2024, with a total of 9 participants. The objective was to raise awareness and equip staff with the capability to manage and operate a sustainable supply chain.



BAAN DEK PROJECT FOR CHILDREN IN WORKER CAMPS

WHAUP, WHA Group and Baan Dek Foundation (BDF) have jointly signed an MOU to support the Building Social Impact (BSI). The aim is to create a safe environment, improve access to health, education, and protection for children and families from our construction worker who stayed in our construction camps. As we recognize the sustainable supply chain, WHAUP invited expert to conduct training courses on ESG covering social issues and human rights for contractors and camp residents to cultivate and promote sustainability concepts, especially in terms of occupational health and safety for contractors. Over 20 representatives from contractors and WHAUP participated in the training. We also welcomed Baan Dek Foundation network to join our WHA Supplier Day as a guest speaker for key suppliers on February 7, 2024. Currently, WHAUP, Baan Dek Foundation, and contractors are planning to improve the quality of life for residents in construction worker camps.



5. IMPACTS ON STAKEHOLDERS AND ENVIRONMENT

WHAUP manages its supply chain from upstream to downstream operations based on sustainable supply chain management principles. This approach not only enables us to operate efficiently and deliver products and services to customers effectively but also generates positive social and environmental impacts. Communicating business ethics with partners fosters trust and transparency in operations between WHAUP and its partners, including compliance with standards related to human rights, occupational safety, and environmental management. In addition, our supply chain management system and various initiatives help strengthen relationships with partners and encourage them to enhance their capacity to operate responsibly toward all stakeholders whether employees, communities, or consumers. Training on ESG practices for partners also facilitates knowledge sharing and the dissemination of best practices in sustainability. When partners understand and commit to sustainability principles in their operations, it helps reduce negative business impacts on society and the environment, leading to a strong supply chain and promoting balanced and sustainable business growth.

6. NEXT STEP

Efficient supply chain management is a key driver in enhancing sustainability and increasing our competitiveness in providing utility and power services within industrial estates. Therefore, WHAUP is committed to continuously improving supply chain management processes in alignment with best practices and sustainability goals, with the aim of creating long-term value for all stakeholders particularly in managing the procurement of energy and essential services that support operations within industrial estates.

We have established a waste management plan for construction and maintenance activities related to utility systems, in order to oversee the waste management practices of partners or contractors within industrial estates, ensuring that such operations do not negatively impact society and the environment. In addition, we also plan to revise the supplier selection criteria in 2025 to incorporate circular economy practices. Relevant requirements will be specified in contracts, Bills of Quantities (BOQ), and Terms of Reference (TOR) prior to engaging in business partnerships, to ensure that partners adopt circular economy practices in alignment with our approach.

We also plan to develop projects to enhance the efficiency of supply chain management in 2025. These include the implementation of AI Procurement Yoda Phase 2 in the procurement process, as well as the development of the Corporate Procurement Management System (CPRS) Phase 2, which will incorporate contract management processes and the development of a Procurement Reference Price Dashboard using Power BI. These initiatives aim to elevate the efficiency and sustainability of utility and power services within industrial estates.

WHAUP also aims to continuously improve the performance of our partners each year with a target set to maintain 100% performance evaluation coverage of all significant partners and to provide annual support through corrective action plans for all identified high-risk partners. Additionally, we have set a goal to enhance the capacity of 47 partners in 2025 and aims to reduce the number of high-risk partners to 3% or as low as possible each year. These efforts are intended to ensure that our supply chain management remains robust and of the highest quality, while minimizing risks that could impact business operations and organizational sustainability. WHAUP emphasizes the selection of partners who are capable of conducting business ethically and sustainably.





INNOVATION AND TECHNOLOGY MANAGEMENT

1. GLOBAL TREND

Amid the rapid pace of global digital transformation and growing economic uncertainties, organizations must adapt and integrate advanced technologies such as Artificial Intelligence (AI), Blockchain, Intelligent Automation, and Web 3.0 into their business strategies to gain a competitive edge.

The adoption of these technologies not only enhances operational efficiency, reduces costs, and strengthens business stability but also enables companies to better meet the needs of modern consumers, improve data security, and minimize long-term environmental impact. Therefore, developing a digital strategy that aligns with ongoing changes and selecting technologies that best fit the business context are essential factors in maintaining competitiveness, achieving sustainable growth, and meeting customer expectations effectively without compromising environmental or social well-being in the long run.

2. OUR POSITION

In response to the ongoing changes driven by Digital Transformation, WHAUP has placed a strong emphasis on integrating technology and innovation into the provision of utilities and energy services within industrial estates. A strategic roadmap has been developed to modernize the business infrastructure and address challenges from all dimensions under WHA Group's "Mission To The Sun" initiative. This effort aims to enhance WHAUP's capability to deliver high-quality services to customers within the industrial estates. WHAUP has also set targets to expand its business across various areas in preparation for sustainable growth and global competitiveness as a Global Company. Additionally, WHAUP is moving forward with the goal of becoming a Tech-Driven Organization by 2025, alongside WHA Group. This transformation is designed to strengthen the efficiency and stability of its utilities and energy business while maintaining environmental responsibility and sustainably meeting customer needs.



In alignment with the strategic plan jointly developed with WHA Group, WHAUP officially commenced its transition to a technology-oriented organization in 2024. Key innovations such as Computer Vision, Generative AI, and AI Machine Learning Data Insight have been adopted as core components of operations. These technologies help increase operational efficiency, reduce complexity and workload for personnel, and enhance accuracy and speed in data analysis. Furthermore, WHAUP has developed a digital system to aggregate and process data, ensuring optimal use of resources.

WHAUP recognizes the potential environmental impacts associated with the use of technology

and therefore places great importance on carefully planning its digital operations. The focus is on reducing unnecessary resource consumption to minimize the risk of negative environmental consequences while continuously promoting innovations that support sustainability.

WHAUP has also committed to being “The Ultimate Solution for Sustainable Growth” to emphasize the importance of creating sustainable growth together with all stakeholders. WHAUP will act as a “Pioneering Partner” ready to face challenges and actively participate in creating new innovations for the benefit of society, the economy, and the environment. WHAUP also highlights the WHA or WHA Group Core Values for everyone to acknowledge, which consist of



3. MANAGEMENT APPROACH

3.1 GOVERNANCE STRUCTURE

WHAUP places great importance on managing technology and innovation across its integrated utilities and energy services within industrial estates. The focus is on establishing a clear governance framework, developing personnel skills, and investing in advanced technologies to create innovations that meet market demands sustainably and efficiently.

To strengthen business stability and sustainability, WHAUP has established a Technology and Innovation

Working Group to oversee the systematic integration of technology into its industrial estate operations. The Chief Technology Officer works in collaboration with the Chief Operating Officer to manage and enhance operational efficiency. This working group operates under the supervision of the Board of Directors, which is responsible for setting policies, planning strategic directions, monitoring performance, and assessing the impact of technology and innovation policies. This structure ensures that WHAUP’s utilities and energy services remain competitive and aligned with sound operational standards.

Roles	Responsibilities
Chief Technology Officer	Responsible for defining the organization’s vision strategy and direction in technology with a focus on researching and developing new technologies that can be applied to create business opportunities supporting technology investment for each business hub and collaborating with the Chief Operating Officer of each business to drive innovation and technological advancement.
Chief Operating Officer	Responsible for managing and controlling the organization’s operations by working closely with the chief technology officer to implement technology in business operations in order to increase efficiency reduce costs and optimize resource management.
The Board of Directors	Oversee and sets policy directions for technology and innovation within WHAUP, responsible for long-term strategic planning, monitoring the performance of the working team on technology, assessing the impacts of policy implementation, and defining continuous development approaches to ensure that technology and innovation operations adhere to good governance principles, transparency, and effectively drive the organization towards sustainable growth in the digital era.

3.2 RISK AND OPPORTUNITIES MANAGEMENT STRATEGY

In an era of rapidly advancing technology that has become a key driver across all sectors, organizations must adapt their strategies and adopt modern technologies to enhance their competitive edge and effectively respond to constantly evolving demands. However, these technological advancements also introduce various risks that may impact business operations. Therefore, the ability to manage such risks is critical to ensuring long-term stability and sustainable growth, particularly in the utilities and energy services sector within industrial estates. This sector requires the development of technologies and innovations that can efficiently respond to ongoing changes.

Risks	Opportunities
One of the key risks accompanying technological development is cyber threats and data breaches, which can affect the trust of customers and partners. If the organization’s critical data is leaked or attacked, it may lead to financial losses and damage to the organization’s reputation. Additionally, developing new technologies requires significant capital and resources. If research and development (R&D) projects fail, it can impact on the organization’s financial performance. At the same time, some technologies may become obsolete quickly, forcing the organization to continuously invest to maintain the competitive edge in the market. Failure to adapt in a timely manner may result in customers losing opportunities to access the most advanced and efficient technologies.	Digital technologies also present opportunities for organizations to enhance operational efficiency. Technologies such as the Internet of Things (IoT), Artificial Intelligence (AI), and Automation can effectively reduce errors, improve accuracy, and lower operational costs. In addition, developing sustainable products and services, such as low-carbon goods or the use of recycled materials, helps strengthen a positive brand image and meet the expectations of customers and stakeholders who prioritize environmental responsibility. Furthermore, emerging innovations and technologies create opportunities for organizations to expand into renewable energy and smart technology markets. These advancements help enhance competitiveness and broaden the customer base internationally, especially in an era where technology and sustainability are key drivers of business growth and expansion.

Therefore, identifying and managing opportunities and risks related to technology and innovation in a balanced manner is critically important. Organizations that can effectively develop innovations and apply technology, while also implementing comprehensive risk management strategies, will be better positioned to build stakeholder confidence, enhance competitiveness, and achieve sustainable growth in a rapidly changing business environment.

WHAUP conducts regular reviews of its performance annually or in response to significant changes, to ensure that all projects are continuously developed and improved with efficiency. Feedback from all stakeholder groups is taken into consideration to maximize stakeholder value and support the long-term stability of the organization.

3.3 RISK MANAGEMENT

Under the strategy “WHA : WE SHAPE THE FUTURE” of WHA Group, WHAUP is committed to developing and creating added value in products and services to meet the needs of new customers and sustainably retain the existing customer base. WHAUP aims to become a fully Tech-Driven Organization by upholding the promise of “The Ultimate Solution for Sustainable Growth” through the following key strategies:

1. Digitize & Empower Core Business

WHAUP implements new technologies and innovations within the organization to enhance business reliability and efficiency through intelligent analytics, process automation, leveraging the mobility, connectivity of digital technology. WHAUP aims to provide value that surpasses industry competitors. Additionally, WHAUP focuses on the acquisition of new businesses, new ideas, incubation, and expansion through collaboration within a platform that includes WHA’s Group customers and stakeholders.

2. Build the Workforce of the Future

To prepare for change, WHAUP focuses on establishing a way of working and thinking that embraces digital transformation. WHAUP aims to build a culture that empowers end-to-end digital processes and operations.

3. Enable the Smart Enterprise

WHAUP aims to build digital capabilities for our business processes in order to drive organizational efficiency, effectiveness, and to driving the organization with innovation.

4. Establish Digital Foundation and Platform

To build an IT foundation that supports short-term business needs and drives long-term business goals by enabling flexibility and scalability by transforming operations from core platform and governance structures.

5. Launch New Business

Bringing new technologies and innovations to facilitate new business acquisitions, foster new ideas, incubation, and drive business expansion. This is achieved through collaboration within WHA’s customer and stakeholder platform.

WHAUP focuses on comprehensive communication of the technology operation guidelines to directly related stakeholders, such as customers and partners, to enhance operational capabilities toward an efficient digital system. WHAUP provides opportunities for all sectors to access innovation services and knowledge widely while developing new business models aligned with changes in the New Normal era in a sustainable manner. Additionally, WHAUP places importance on risk management arising from increasing challenges, including maintaining system stability and enhancing data security, to ensure operations are stable and reliable.

THE TECHNOLOGY INFRASTRUCTURE OF WHAUP

WHAUP has restructured its business by leveraging technology to support operations through the Digital Transformation project. This initiative aims to elevate the business to meet the diverse and challenging demands of stakeholders. Such transformation requires continuous investment in technology and information systems, which consequently introduces risks related to cybersecurity and data protection. Both internal corporate data and the business information of customers and partners may be vulnerable to data breaches, misuse, or damage, potentially leading to

significant consequences. To address these risks, WHAUP complies with the Personal Data Protection Act B.E. 2562 (2019) and the Cybersecurity Act B.E. 2562 (2019), which form the foundation for protecting organizational and customer data. WHAUP has also been certified under the ISO/IEC 27001:2022 standard for Information Security Management Systems in 2023 and the ISO/IEC 27701:2019 standard for Privacy Information Management Systems in 2024.



WHAUP strictly enforces the Cybersecurity and Information Security Management Policy of WHA Group as a guideline for relevant departments to ensure an effective transition to the digital era. The Information Technology Department (ITD) acts as the central unit responsible for overseeing the overall security of information technology.

Additionally, WHAUP conducts cybersecurity communication and training for employees, which is part of the employee performance indicators, to raise awareness and enhance skills in handling cyber threats. The processes for reporting and managing security incidents are clearly defined, along with annual emergency plans and drills to strengthen readiness and resilience in managing potential incidents. Various activities are also carried out to identify and address vulnerabilities that may risk data leakage or theft. In the event of a data breach, all involved parties must strictly follow the information security response mechanisms to ensure that issues are resolved quickly and effectively. (For more information, see the Data Security section).

3.4 METRICS AND TARGETS

WHAUP aims to become a Tech-Driven Organization by 2025 together with WHA Group, focusing on applying technology and innovation in the creation of new products and services. This will strengthen WHAUP’s business to meet the continuously changing demands of its customer base, while also generating sustainable revenue and growth in the future.

In this regard, WHAUP has collaborated with WHA Group to transform technology and innovation into the foundation of business operations by announcing a full-scale strategic roadmap under WHA Group’s “Mission To The Sun.” This mission aims to break through current limitations and elevate potential to the next level. In 2024, WHAUP effectively executed the planned initiatives, including changes to work processes, adapting corporate culture to align with transformation, and building partnerships to enhance the organization’s capabilities and potential in innovation and technology.

Mission to The Sun Programs



Turn to Tech Company in 2024



WHA Digital Transformation Key Deliveries in 2024



Digital Transformation

Digital Systems

Delivering Digital Value
Focus on enhancing and integrating current systems and implementing a strategic new initiative to maximize the business impact of digital technologies.

Data and AI

Driving Data-Driven and Unlocking Value with AI
Dedicated to enhancing data quality and structure for high-value datasets, while simultaneously spearheading AI initiatives to foster a culture of AI-powered innovation.

Cybersecurity

Fortifying Our Digital Shield
Committed to enhancing infrastructure security with AI-powered defenses and strengthening IT governance and processes to meet rigorous ISO standards.

Mission To The Sun



Mission To The Sun Project Achievement 2024



4. HIGHLIGHT PROJECTS

In 2024, WHAUP continued to build on the success of technology projects from the previous year while continuously initiating new projects developed by employees within the organization. These efforts aimed to enhance work efficiency and create new business opportunities. During this year, WHAUP implemented over 40 technology projects with a total investment value exceeding 241 million baht. All projects focused on increasing productivity, improving operational efficiency, and reducing operating costs as follows:

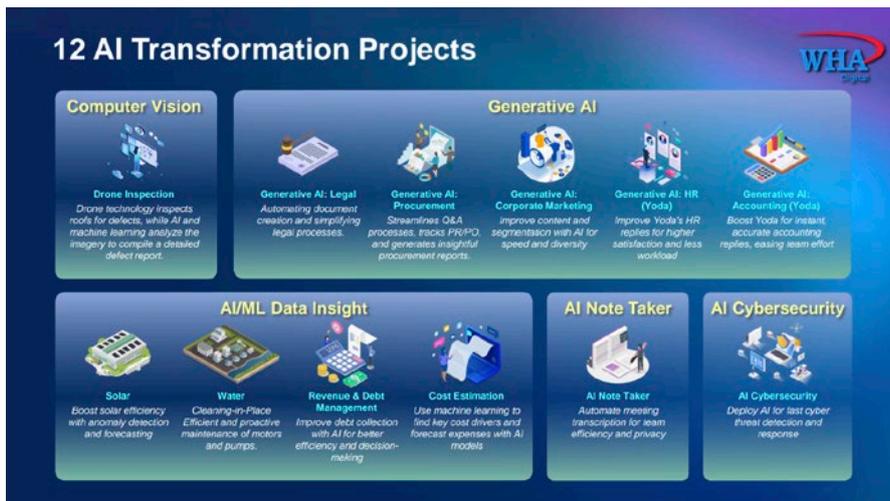
APPLICATION OF AI TECHNOLOGY IN SYSTEM DEVELOPMENT AND BUSINESS EFFICIENCY ENHANCEMENT

WHAUP has applied Artificial Intelligence (AI) technology in various areas to enhance operational efficiency and support innovation development within

the organization. AI technology has been used in a range of operations and has significant potential to transform industries, such as:

- 1. Computer Vision:** image processing technology for automatic analysis and inspection
- 2. Generative AI:** creative artificial intelligence that supports innovation development
- 3. AI/Machine Learning Data Insight:** deep data analysis using artificial intelligence and machine learning
- 4. AI Note Taker:** automatic meeting note-taking
- 5. AI Cybersecurity:** strengthening cybersecurity with AI technology

Additionally, WHAUP utilizes AI technology to support sustainability goals, such as detecting solar anomalies (Solar Anomalies), forecasting solar energy production (Solar Forecasting), and predicting the performance of reverse osmosis systems (RO Performance Prediction).



WHASApp CUSTOMER APPLICATION

In 2024, WHAUP used the WHASApp Customer Application, which launched in July 2024. The application focuses on meeting customer needs by enhancing convenience and providing an additional communication channel between customers and WHAUP. It offers various features, including customer support chat (CHAT), maps with VR360 (MAP&VR360), news notifications (BROADCAST), utility and solar power usage information (USAGE), payment status checking (BILLING), and contract access (CONTRACT). All features are designed to enable customers to communicate with the organization quickly and conveniently, as well as to easily access important information anytime. Customers and/or authorized representatives in Thailand and Vietnam can access the WHASApp application via both mobile phones and the WHA Super App website.

The WHASApp Customer Application project enhances customer experience by providing an easy-to-use and convenient platform. It improves communication efficiency between customers and the service team, allowing customers to access critical information promptly and effectively. This meets customers' needs for contact and information requests, resulting in timely and high-quality organizational services.

SMART NATURAL WATER MANAGEMENT PROJECT

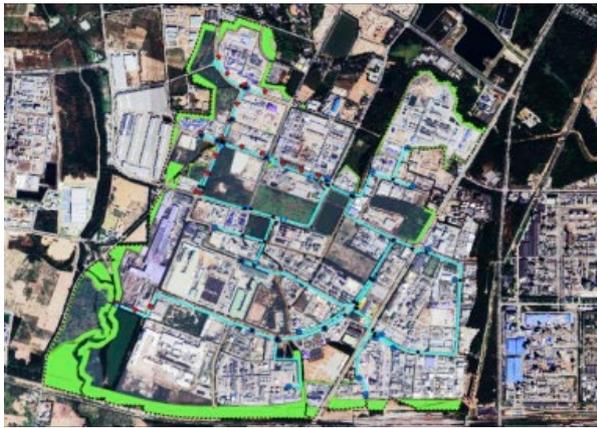
WHAUP has developed the Smart Natural Water Management project to manage water resources efficiently and sustainably by utilizing intelligent sensor technology to monitor the status of reservoirs, including both inflow and outflow volumes. This system enables real-time monitoring of water balance in storage sources, maximizes water usage efficiency, and supports precise water management to meet future demands sustainably.



This project also helps reduce energy consumption in water distribution processes and efficiently monitors water balance in reservoirs. It mitigates risks associated with water management errors, such as flooding or water shortages, ensuring that nearby communities are not adversely affected by WHAUP's business operations.

GIS/HYDRAULIC MAP PROJECT

WHAUP has developed the GIS/Hydraulic Map project to enhance the management of WHAUP’s water pipeline system by utilizing GIS technology and hydraulic system modeling to digitize data. This enables monitoring of water usage behavior and improves the accuracy of water data analysis within the system. The project plays a crucial role in increasing the efficiency of water resource management and reducing losses in the system, as well as supporting sustainable long-term water planning and management.



SMART RAINFALL MONITORING PROJECT

WHAUP has developed the Smart Rainfall Monitoring project using sensor technology to measure and record real-time rainfall amounts, enabling precise monitoring and assessment of rainfall intensity. The data collected is processed and displayed through the Unified Operation Center (UOC) system and a website, allowing for convenient and rapid data access. This supports effective decision-making and water resource management.

Code	Site Name	Date/Time	Rainfall
ES0	Eastern Seaboard Industrial Estate	2024-07-24 13:00 - 13:30	0.00
WHA-CE1	WHA Chonburi Industrial Estate 1	2024-07-24 13:00 - 13:30	0.00
WHA-CE2	WHA Chonburi Industrial Estate2	2024-07-24 13:00 - 13:30	0.00
WHA-EE	WHA Eastern Industrial Estate (Map 1a Plot)	2024-07-24 13:00 - 13:30	0.00
WHA-ES01	WHA Eastern Seaboard Industrial Estate	2024-07-24 13:00 - 13:30	0.00
WHA-ES02 - Pond 7	WHA Eastern Seaboard Industrial Estate2	2024-07-24 13:00 - 13:30	0.00
WHA-ES03 - WFO	WHA Eastern Seaboard Industrial Estate2	2024-07-24 13:00 - 13:30	0.00
WHA-ES04	WHA Eastern Seaboard Industrial Estate4	2024-07-24 13:00 - 13:30	0.00
WHA-RI1	WHA Rayong Industrial Land	2024-07-24 13:00 - 13:30	0.00
WHA-SI1	WHA Saraburi Industrial Land	2024-07-24 13:00 - 13:30	0.00

SOLAR TELECOM TOWER

WHAUP recognizes the importance of utilizing solar energy, a clean and sustainable energy source, to reduce carbon dioxide emissions while being environmentally friendly. In 2024, WHAUP implemented the Solar Telecom Tower project by installing solar power systems to supply electricity to three mobile telecom towers located within industrial estates, each with a capacity of 10 kW, totaling 30 kW. It is expected that by 2025, this project will reduce carbon dioxide (CO2) emissions by more than 18.50 tons per year.

Furthermore, the Solar Telecom Tower project will expand to include new telecom towers built by WHA within industrial estates, reinforcing WHAUP’s commitment to efficient and sustainable clean energy use in the future.



P2P ENERGY TRADING PROJECT WITH RENEX

WHAUP has developed a Peer-to-Peer Energy Trading System that facilitates the trading of solar energy among energy users within industrial estates. This initiative contributes to reducing carbon dioxide emissions, lowering operational costs, and promoting sustainability with long-term profitability. The project operates through two main platforms: Energy Trading and Carbon Credit Trading.

On the energy trading side, the RENEX platform serves as the intermediary for energy transactions between 7 prosumers (producers and consumers) and over 40 consumers, enabling a total trading capacity of 4 megawatts. This project focuses on distributing environmentally friendly energy sources such as solar power while.

For carbon credit trading, the project has registered carbon credits with the Electricity Generating Authority of Thailand (EGAT) and the Thailand Greenhouse Gas Management Organization (TGO). Currently, the project manages carbon credits totaling 65,660 tCO₂ per year and 42,876 Renewable Energy Certificates (REC) per year, assisting buyers in achieving their Net Zero targets.

Both platforms play a crucial role in advancing sustainability by offering diverse services such as clean energy trading, carbon credit trading, and Renewable Energy Certificate (REC) management. The developed system ensures transparency and incorporates mechanisms for trade matching, transfer, and exchange, alongside additional services such as certificate registration, double counting verification, and certification issuance. The P2P Energy Trading project helps reduce operational costs through clean energy usage, supports the organization’s Net-Zero goals, and promotes renewable energy and clean energy technologies by enabling energy exchanges within the user network. This approach fosters environmentally friendly and sustainable operations.



SOLAR ANOMALIES DETECTION PROJECT

In 2024, WHAUP developed the Solar Anomaly Detection project, an innovation powered by Artificial Intelligence (AI) technology to enhance the efficiency of real-time detection and analysis of abnormalities in solar energy systems. This project focuses on increasing the availability of power plants, reducing risks of issues, and maintaining a sustainable cost advantage.

The AI system for Solar Anomalies Detection can quickly and accurately identify abnormalities in solar panels and related equipment. It detects issues such as panel degradation, inverter malfunctions, impacts from weather conditions, dust deposits, shadows from external objects, and debris that may interfere with solar energy production. This detection capability enables maintenance teams to

promptly address problems, reducing energy loss and maintenance costs. Additionally, Solar Anomalies Detection is designed to integrate with WHAUP’s IoT platform—a comprehensive renewable energy management and monitoring system. This platform features a real-time dashboard that allows precise and swift energy data monitoring and management around the clock. The AI system acts as an intelligent assistant, continuously updating maintenance teams. When an issue is detected, it sends an alert within 10 minutes and enables resolution within 72 hours. This system can reduce energy loss by 324,000 kilowatt-hours per year and cut greenhouse gas emissions from energy loss by 162 tons of CO₂ equivalent (tCO₂e) annually, equivalent to planting 10,798 trees. It also helps save maintenance costs and energy losses totaling over 1.64 Million Baht per year.



The Solar Anomaly project not only enhances the efficiency of solar energy management but also supports sustainable operations by reducing energy loss, improving production efficiency, and minimizing environmental impact. This reinforces WHAUP's role in leveraging digital technology to develop the efficient and sustainable use of clean energy for the future.

SOLAR FORECASTING PROJECT

In 2024, WHAUP developed the Solar Forecasting project, collaboratively developed technology within WHAUP using Artificial Intelligence (AI) to analyze customers' electricity demand (self-consumption) alongside the energy production capacity of solar panels. This analysis enables the identification of complex relationship patterns and efficient management of energy production.

The Solar Forecasting Model can predict energy production based on key factors such as sunlight intensity, atmospheric conditions, and consumer energy usage behavior. This improves forecast accuracy even under uncertain weather conditions, allowing producers to plan solar energy production efficiently, increase energy yield, and manage energy storage appropriately according to usage. Solar energy is becoming an important energy source today. The shift to clean solar energy not only meets energy demands but also reflects environmental responsibility by reducing fossil fuel consumption and lowering carbon footprint emissions.

Applying AI technology for effective energy management aligns with the digital era and sustainable development. Solar Forecasting is developed as an example of using technology to support business operations with social and environmental responsibility.





RO SYSTEM PERFORMANCE FORECASTING PROJECT

In 2024, WHAUP developed the RO System Performance Forecasting project, focusing on applying Machine Learning and AI innovations to improve the efficiency of the Reverse Osmosis (RO) system by enhancing data analysis accuracy and forecasting system performance at the highest level. WHAUP advanced the project by integrating IoT technology to collect data from various devices and process it through cloud systems, enabling convenient and rapid real-time monitoring of operational status. Advanced Machine Learning algorithms are used for deep data analysis, accurately predicting membrane lifespan, as well as recommending Cleaning-in-Place (CIP) schedules and membrane replacements at optimal times to reduce operating costs and prevent system downtime.

WHAUP has further reinforced the success of the project by developing an interactive dashboard system that enables users to accurately monitor key parameters such as water temperature, heavy metal contamination levels, and lithium concentration. The system includes automatic alerts for any abnormalities, allowing flexible management of the RO system that effectively responds to environmental changes. In the future, WHAUP plans to expand the scope of the RO System Performance Forecasting project to meet the needs of customers both within and outside the WHA Group ecosystem. The entire ecosystem focuses on developing advanced and sustainable technologies to enhance competitiveness in the digital era and support highly efficient business operations.

5. IMPACTS ON STAKEHOLDERS AND ENVIRONMENT

WHAUP is committed to continuously developing and elevating its business to adapt and grow steadily in the era of digital transformation. The application of innovation and technology serves as a fundamental foundation in operating the utilities and energy business, both in enhancing service capabilities and improving efficiency to respond to customer demands quickly and accurately.

At the same time, WHAUP is advancing toward becoming a Tech-Driven Organization by 2025 together with WHA Group, driven by the “Mission To The Sun” framework. This mission aims for sustainable business growth and readiness to embrace new opportunities for business development to become a leading global organization.

Beyond business advancement, WHAUP places great importance on social and environmental responsibility by leveraging technology and intelligent systems to increase efficiency in managing resources such as water, energy, and pollution control in various forms. This ensures resource utilization is efficient and sustainable. Concurrently, WHAUP promotes the use of innovation to create positive experiences for all stakeholders, including employees, customers, surrounding communities, and the public participating in various activities and projects conducted by WHAUP. This collaboration aims to develop and elevate the overall quality of life in society toward the goal of long-term sustainable growth together.

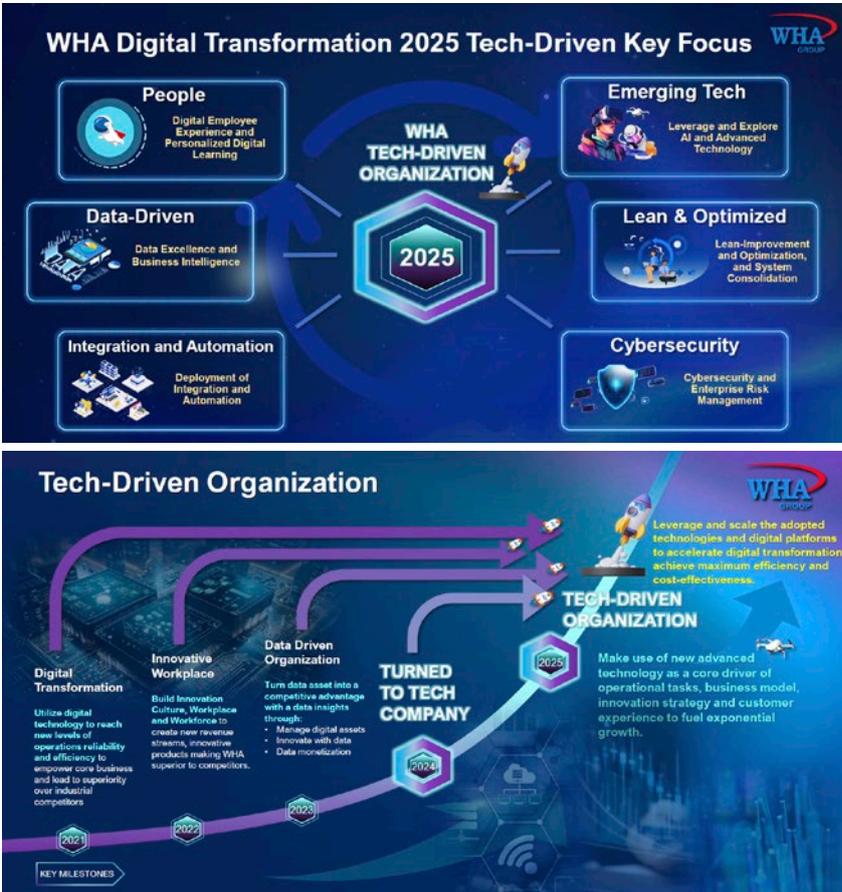
However, the application of technology in communities may have negative impacts that must be considered, such as lack of access to technology for certain groups who may be unable to access or learn how to use it, as well as impacts on traditional lifestyles and cultures that may be altered by technological development. Therefore, WHAUP emphasizes responsible management of technology in the utilities and energy sectors, focusing on careful and thorough operations including planning, community participation, and communication to build mutual understanding. WHAUP adheres to the Sustainable Development Goals (SDGs) as a key guideline to ensure that technology application maximizes benefits for communities and stakeholders without causing inequality or uncontrollable negative impacts, while also building trust and acceptance from communities for sustainable long-term business operations.

6. NEXT STEP

WHAUP places great importance on developing and applying innovation and technology as a fundamental foundation for utilities and energy systems to

enhance operational efficiency and create long-term sustainability. The organization is driven by WHA Group’s “Mission To The Sun” strategy, which aims to promote systemic change and elevate the organization’s capabilities in all dimensions. In 2024, WHAUP developed projects under the framework of nine programs, totalling over 40 projects. These cover technology development, infrastructure, services, and management, with plans to continuously expand the implementation of these programs in the future.

In addition, WHAUP has adopted Artificial Intelligence (AI) technology and Data Insights to support project implementation efficiently. This is conducted under a safe and transparent governance framework, referencing the international standard ISO/IEC 42001:2023 to ensure proper control of AI usage. WHAUP remains committed to becoming a Tech-Driven Organization by 2025 together with WHA Group and aims for the long-term goal of becoming a leading global company by 2030 based on economic, social, and environmental sustainability.



1. GLOBAL TREND

In today's rapid digital advancement, data security has become a key priority for organizations worldwide. The increasing number and complexity of cyber threats such as ransomware attacks, unauthorized data access, and phishing scams pose significant risks to business operations and undermine the trust of key stakeholders, including customers, investors, and business partners.

Digital data exchange has become an unavoidable aspect of business environments driven by technology. From cloud-based storage systems and the use of Artificial Intelligence (AI) in data processing to the growing deployment of Internet of Things (IoT) devices, organizations are exposed to heightened cybersecurity vulnerabilities. As a result, it is critical to establish a robust and comprehensive cybersecurity infrastructure and proactively manage evolving risks to mitigate potential damage.

Beyond protecting against potential financial impacts from cyberattacks, data security plays a crucial role in building trust and enhancing the organization's reputation among stakeholders. Data loss or security breaches could potentially damage an organization's image. Therefore, organizations must develop flexible and adaptive cyber risk management to emerging technologies and trends, in order to establish a strong protection, safeguard valuable information, and support the organization's long-term stability.

2. OUR POSITION

Over the past year, WHAUP has supported WHA Group in its transformation into a full-fledged Tech Company and has remained committed to developing itself as a tech-driven organization in alignment with WHA Group's strategic direction. WHAUP places the highest priority on data security to protect internal operating systems and stakeholder information from increasingly complex and rapidly evolving cyber threats.



Since 2021, WHAUP has collaborated with WHA Group to implement more than 38 digital transformation projects and over 50 data-driven initiatives, all of which have been successfully executed. In 2024, WHAUP officially became a data-driven organization, analyzing data from multiple sources to enhance strategic decision-making, product development, pricing strategies, and marketing effectiveness. This progress aligns with the WHA Group's vision of becoming a fully tech-driven organization by 2025.

To support technological growth across all aspects of the business, WHAUP has adopted WHA Group's comprehensive and modern Cybersecurity Framework. Proactive measures such as AI-driven threat detection systems and automated response mechanisms have been deployed to minimize the risks of cyberattacks and maximize data protection capabilities. These efforts reinforce the confidence of customers, partners, and investors that all information is safeguarded in accordance with high security standards. In addition, WHAUP places strong emphasis on enhancing employees' technological and cybersecurity skills through continuous training, particularly in data privacy regulations and compliance with international standards such as ISO 27001. These initiatives help cultivate a corporate culture that prioritizes digital security and promote shared responsibility in conducting transparent, resilient, and sustainable business operations.

3. MANAGEMENT APPROACH

3.1 GOVERNANCE STRUCTURE

WHAUP has implemented WHA Group's Cybersecurity and Information Security Management Policy with mandatory compliance required from all employees to strengthen the protection of organizational and personal data. As information is considered a critical asset in business operations, any failure to ensure the confidentiality, integrity, and availability could negatively impact the organization's financial performance, credibility, and reputation. The policy focuses primarily on protecting electronic data, as the majority of the company's information is stored electronically, and this trend is expected to continue increasing in the future. The Cybersecurity and

Information Security Management Policy is designed to govern the operations of all relevant departments. Employees can access the policy via the company's internal website. Additionally, WHAUP has established data security performance as a key performance indicator (KPI) for all employees responsible for managing information systems, in order to drive the highest level of effectiveness in data security management.

Information security management is important at all levels, from establishing a robust governance structure and developing employee knowledge and skills, to deploying advanced technologies for effective cyber risk monitoring and response. These efforts are aimed at ensuring that our business operations are conducted securely, transparently, and in accordance with international standards. WHAUP has collaborated with WHA Group to establish a data security governance structure consisting of:

The Risk Management Committee serves as the central body overseeing all cybersecurity and information security risks. It is responsible for setting strategic directions and integrating cyber risks into the overall enterprise risk management framework.

The Cybersecurity and Information Security Committee chaired by Mr. Nunsilp Janvarin, Chief Technology Officer, reports directly to the Risk Management Committee. The committee's primary responsibilities are to establish policies, approve strategies, and monitor the implementation of information security initiatives across the organization.

The committee also works with 3 key departments:

- 1. Information Technology Department (ITD):** Responsible for managing IT systems across all business units, including installation, maintenance, and troubleshooting. The department also compiles reports on information security incidents to identify root causes and propose mitigation measures.
- 2. Internal Entities:** All employees across the organization receive training on cybersecurity policies and practices to enhance awareness and readiness for the safe use of digital systems.

3. **External Entities:** WHAUP collaborates with business partners and alliances to ensure that the operations of all parties comply with the established security standards.



The Cybersecurity and Information Security Committee is led by Gen. Prachya Chalermwat, Chairman of the Risk Management Committee and Independent Director, and Mr. Nunsilp Janvarin, Chief Information Security Officer (CISO) from WHA Group who is directly responsible for establishing information security strategies and practices. To ensure that all types of risks are effectively managed, the Cybersecurity and Information Security Committee submits quarterly risk summary reports to the Risk Management Committee. The Risk Management Committee then reviews information security risks during the quarterly meetings and forwards the findings to the Board of Directors. With this comprehensive governance structure and systematic approach, WHAUP is well-positioned to address cybersecurity challenges in the digital era with resilience and sustainability, while reinforcing trust among all stakeholders.

3.2 RISK AND OPPORTUNITIES MANAGEMENT STRATEGY

In an era of rapid digital transformation, cybersecurity is a crucial factor that affects an organization’s competitiveness and credibility as it is protecting the organization’s and stakeholders’ critical information, along with ensuring business continuity. These factors enable businesses to operate with stability and achieve long-term sustainable growth.

Therefore, WHAUP must manage cybersecurity-related opportunities and risks effectively by continuously developing and strengthening the cyber threat prevention measures in alignment with international standards. It is also essential to promote a strong culture of information security within the organization. These efforts are key to building stakeholder confidence and maintaining a strong competitive advantage.



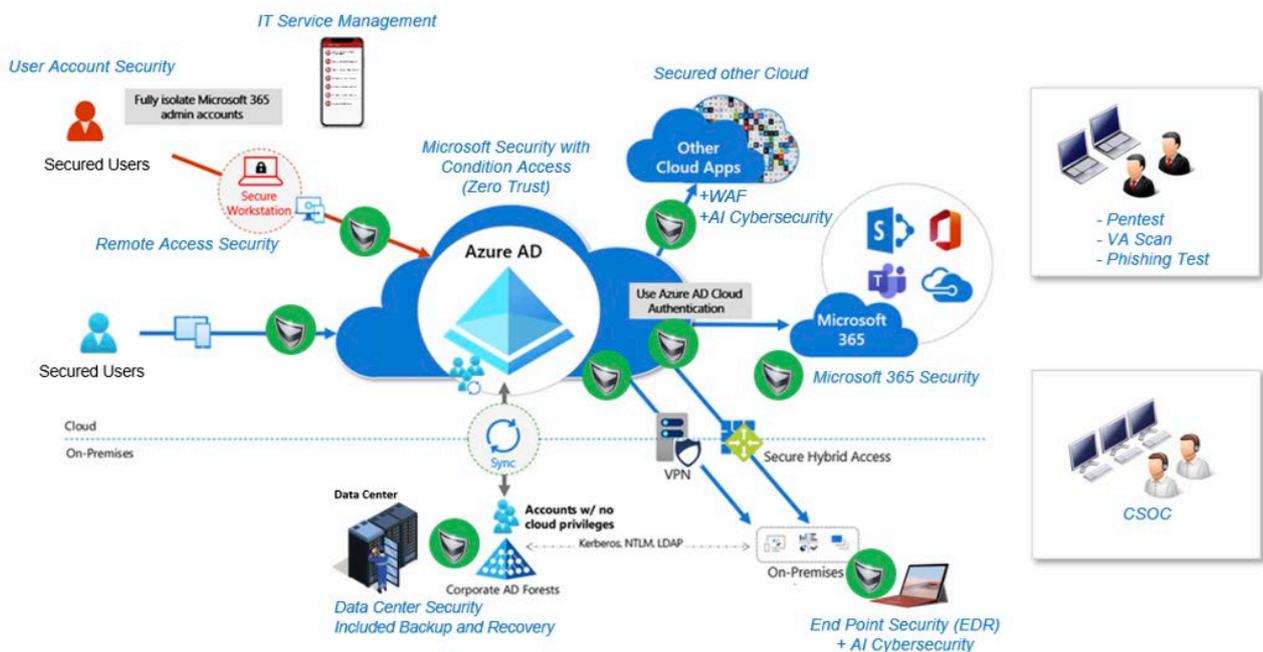
Risk	Opportunities
<p>Cyberattacks in the form of data breaches pose a risk that could impact critical information belonging to the organization and our stakeholders, thereby affecting the organization’s credibility and competitiveness. Additionally, incidents impacting information technology systems could disrupt operational processes and potentially affect revenue, business continuity, and recovery costs. Therefore, WHAUP places great importance on continuously enhancing cybersecurity measures to strengthen our defense systems and effectively respond to emerging challenges, with a commitment to proactively protecting data and building long-term stakeholder confidence.</p>	<p>Effective cybersecurity management has created significant opportunities for WHAUP to strengthen stakeholder trust through robust and transparent data protection. Investments in information security infrastructure not only enhance competitiveness but also support technological adaptation and open opportunities for new technology-related businesses. This commitment also supports WHAUP’s sustainable growth goals amid the rapidly evolving digital economy.</p>

3.3 RISK MANAGEMENT

EMPLOYEE PRACTICES ON CYBERSECURITY AND INFORMATION SECURITY

WHAUP recognizes the importance of information security and cybersecurity in protecting the organization’s critical data, maintaining business continuity, and complying with relevant laws and regulations. Therefore, WHAUP has integrated cybersecurity management practices into employee performance evaluations to promote awareness, responsibility, and strict adherence to the organization’s security policies.

All employees are evaluated based on their compliance with security measures, reporting of potential threats, and participation in designated information security training programs. Evaluation results are incorporated into the human resource management process, and failure to comply with these practices may result in appropriate disciplinary actions in accordance with organizational regulations.



INFORMATION SECURITY RESPONSE MECHANISM

Data security is an integral part of business ethics and practices that WHAUP firmly adheres to. WHAUP has processes and mechanisms in place to manage these issues. Information security management is a process used to address security incidents in an organization's data. This process aims to reduce risks, support continuous operations, and help recover systems in the event of unforeseen events, enabling the organization to conduct business activities securely. Furthermore, it is a process that focuses on assessing, planning, and implementing measures to ensure that the system can protect itself from unauthorized access and can recover without significant impact if unexpected events occur. To achieve these objectives, we have plans in place for business continuity, emergency response, and incident management to mitigate potential disruptions to the business. WHAUP also conducts emergency response tests once a year with WHA Group, typically in December. The results of the 2024 test indicate that the organization can effectively respond to emergencies and are satisfactory overall.

WHAUP has established processes and mechanisms for reporting and strongly managing information and cybersecurity issues to respond promptly to cyber emergencies. If problems or suspicious incidents are detected, employees can report them for investigation. This includes cases of urgency, data breaches, or violations of business ethics guidelines, as outlined in the complaint handling process in the business ethics section of this report. This policy applies to all employees and specifies guidelines and responsible people for managing and reporting data security issues for data leaks in each case reported. To ensure the most effective response, WHAUP provides training on cyber threats to raise awareness among employees and relevant stakeholders for the most effective operations.

In 2024, WHAUP, in collaboration with WHA Group, integrated Artificial Intelligence (AI) technology to enhance the efficiency of cybersecurity system and strengthen information security management. We

also implemented a Web Application Firewall (WAF) and Web Application and API Protection (WAAP) to safeguard API data and cloud-native applications from complex cyber threats. In addition, the Data Loss/Leak Prevention (DLP) system was upgraded to further improve data security and prevent information leakage or loss. These measures help ensure the confidence of system users and data owners, including personnel, customers, and business partners who exchange information with WHAUP.

DATA SECURITY CERTIFICATION

WHA Group has been certified under the ISO/IEC 27001:2022 standard, an internationally recognized framework for information security management, covering 100% of IT operations. This certification reflects WHAUP's strong commitment to aligning our information security management system with international standards, including the protection of critical data, risk management, and building trust with customers and stakeholders. WHAUP has invested in advanced technologies and processes, while also enhancing the knowledge and expertise of our personnel to effectively address the challenges of the digital era.

This information security certification affirms WHAUP's capability in managing data efficiently, with transparency and reliability. It strengthens confidence among customers, business partners, and all stakeholders, while reinforcing WHAUP's role as a leading utilities and power provider that prioritizes sustainable information security management.

DATA SECURITY SYSTEM TESTING

WHAUP with WHA Group has external parties to conduct regular audits of the data security system and IT security system testing at least two tests per year. These tests include VA Scan or Vulnerability Assessment which helps detect and address security weaknesses. The test also has penetration testing which is a Simulated Hacker Attacks to evaluate the system's resilience against unauthorized access. These efforts not only improve security but also ensure compliance, reduce cyber risks, meet shareholder expectations, and maintain the organization's reputation.



TEST HACK
(Internal/External)

Penetration Testing and VA Scan Scope

- Active Directory (User Login System)
- Office 365
- Oracle
- EOMS
- Low-Code System
- WHA Web Site
- Wi-Fi
- Network
- Firewall

Standard:
CVSS v3.1 (Common Vulnerability Scoring System)

Severity	CVSS Score Rating	Description
CRITICAL	9.0 - 10.0	Exploitation is straightforward and usually results in system-level compromise. It is advised to form a plan of action and patch immediately
HIGH	7.0 - 8.9	Exploitation is more difficult but could cause elevated privileges and potentially a loss of data or downtime. It is advised to form a plan of action and patch as soon as possible
MEDIUM	4.0 - 6.9	Vulnerabilities exist but are not exploitable or require extra steps such as social engineering. IT is advised to form a plan of action and patch after high-priority issues have been resolved.
LOW	0.1-3.9	Vulnerabilities are non-exploitable but would reduce and organization's attack surface. It is advised to form a plan of action and patch during the next maintenance window.
INFORMATION	N/A	No vulnerability exists. Additional information is provided regarding items noticed during testing, strong controls, and additional documentation.

CUSTOMER DATA SECURITY

WHAUP places the highest importance on protecting customer data at the same level as securing internal organizational data. To enhance the effectiveness of information security risk management, WHAUP has introduced a variety of proactive data protection options for customers to choose from, such as firewall systems, anti-virus systems, data backup systems, security systems, and access control systems. These measures help strengthen data protection, ensuring that customers can continue their business operations without interruption while minimizing cybersecurity risks. In addition, WHAUP is committed to continuously developing and improving technology services to keep pace with current circumstances and address the ever-evolving security challenges.



3.4 METRICS AND TARGETS

DATA SECURITY PERFORMANCE

	Target 2024	Performance 2024	Long-term Target
 Employees who have received training in data security	100%	100%	100% every year
 Customer and employee data breach case	0	0	0 cases every year
 Customer and employee complaints regarding personal data transmission	0	0	0 cases every year

4. HIGHLIGHT PROJECTS

WHAUP is committed to continuously developing and driving growth in the digital era to support WHA Group’s goal of becoming a fully Tech-Driven Organization. Therefore, WHAUP places importance on utilizing innovation and data-driven insights as the core of business operations to strengthen and enhance competitiveness in the industry through effective application of digital technologies. Furthermore, WHAUP continues to focus on enhancing customer experience through the development of services and solutions that meet the needs of the digital age, while building trust and confidence in our businesses. This commitment enables WHAUP and WHA Group to maintain their leadership positions in the industry.

With this effective IT approach, WHAUP can respond swiftly and consistently to market changes, reduce the risk of inaccurate decision-making, and improve internal management of the organization effectively. Although there were no incidents of customer data breaches in 2024, in line with our target, we continue to develop our IT systems and enhance data security standards to keep pace with emerging technologies and safeguard customer data under all circumstances.

MOBILE DEVICE MANAGEMENT (MDM)

MOBILE DEVICE MANAGEMENT (MDM) software is a key tool that helps control and protect devices connected to the WHAUP’s systems. It also aids in preventing and mitigating technical risks as well as improving

the efficiency of working with mobile devices within the organization. We use mobile device management software called Microsoft Enterprise Mobile Security (EMS) to manage mobile devices both on-premises and cloud-based. This allows WHAUP to control the use of various devices, including mobile phones, computers, tablets, and laptops. Furthermore, WHAUP can configure specific control settings to ensure that the use of these devices remains secure and up-to-date.

In the past year, WHAUP has further strengthened cybersecurity defenses by implementing a new antivirus solution that includes enhanced End Point Detection and Response (EDR) capabilities. This system provides more comprehensive security coverage and can be utilized both remotely and on-site. It detects and monitors suspicious activities or events occurring at endpoints, offering broader protection beyond the previous version which focused solely on file-based threats.

In 2024, WHAUP also adopted AI Cybersecurity technology to further improve the effectiveness of cybersecurity measures.

END POINT DETECTION AND RESPONSE (EDR)

WHAUP collaborates with Digital Business Group (WHA Digital), for the service providing customers with highly secure database systems through Cloud Services. These services offer a variety of options, including Public Cloud, Private Cloud, Multi-Cloud, and Hybrid

Cloud. We have prepared computer system resources, including hardware, software, and computer network systems under the Fiber Optic (FTTx) infrastructure service, to help customers access data quickly, securely, and with low latency. The Cloud Services team consists of experts certified by global institutions such as Dell, Hitachi Data Systems, VM Ware, and OpenStack, who provide advice and manage computer network systems for customers.

RAISING AWARENESS ON DATA SECURITY AMONG EMPLOYEES

To ensure the implementation of policies and operational procedures, WHAUP communicates and conducts training of employees with WHA Group through mandatory training sessions, as well as additional training for interested employees. In each mandatory training session, there is a test to assess employees' understanding, which serves as a Key Performance Indicator (KPI) for employees to pass the mandatory training. The training includes:

- Cybersecurity and information protection awareness training through the course "Cybersecurity Season IV", which is a mandatory program for our employees. In 2024, 100% of employees participated in the training and successfully passed the assessment.
- Awareness training on Personal Data Protection Act (PDPA) compliance. In 2024, 78% of employees participated in the training and passed the assessment.

- All new employees are required to complete basic security training as part of their onboarding. The training covers policies and procedures related to various aspects of security, including cybersecurity, physical security, email, passwords, mobile devices, and wireless networks.

In addition, WHAUP, in collaboration with WHA Group, has conducted vulnerability testing activities on the company's various systems through external cybersecurity experts. These activities include simulated phishing email tests sent to employees to assess the risk level of phishing threats and to measure employee awareness. The test results are recorded and analyzed to inform training plans, knowledge development, and continuous improvements to our cybersecurity measures. The initial test conducted in 2024 showed that 97% of participants successfully completed the training, marking a significant improvement compared to the previous year. In the final test of 2024, the IT department designed more sophisticated phishing simulations that were harder to detect, resulting in a 95% pass rate-an increase of 2% compared to the prior year, but a 2% decrease from the first test in 2024. Employees who failed the phishing tests were subject to disciplinary action, including suspension of social media access for one month.



5. IMPACTS ON STAKEHOLDERS AND ENVIRONMENT

WHAUP places great importance on effective information security management, focusing on building confidence and strengthening trust among all stakeholders, including customers, partners, and employees. This is achieved through the use of advanced technologies combined with transparent and high-standard data management, particularly concerning personal and business information. These measures enhance confidence in data security and reinforce credibility as a responsible organization operating in the digital era.

Secure and high-quality data management not only reduces the risk of data breaches which can impact the trust of customers and business partners but also lowers costs related to remediation and recovery from data leaks. This is a crucial factor in maintaining long-term business relationships. Furthermore, a robust security system enhances opportunities to expand the customer base, as customers and partners gain confidence in our ability to protect their critical

information. Beyond this, we play an important role in supporting and promoting data security awareness within the community and external partner network. This contributes to strengthening the corporate image as a leader committed to digital security and generating positive social impact, guided by a sustainable development approach amid rapid technological changes.

6. NEXT STEP

WHAUP has supported WHA Group in obtaining the ISO/IEC 27001:2019 certification for Privacy Information Management in 2024, as well as supporting the WHA Group in obtaining the international Artificial Intelligence management standard certification, ISO/IEC 42001:2023, in 2026. This will facilitate the effective and secure development and use of AI across all WHA Group businesses. Furthermore, WHAUP is committed to maintaining high data security performance, aiming for zero data breach incidents annually. This commitment helps build confidence among all stakeholders in the robust and effective security systems.





02

SOCIAL DIMENSION





HUMAN RESOURCES MANAGEMENT

1. GLOBAL TREND

In an era where businesses face rapid changes and intense competition, human resources management is a critical factor for achieving competitive advantage and serves as the foundation for an organization's stability and success. Employees are the most valuable resource. Therefore, investing in skill development, knowledge enhancement, and employee well-being are essential strategies that boost organizational efficiency and adaptability, leading to long-term economic growth and sustainability.

Digital technologies such as Artificial Intelligence (AI) and People Analytics have become essential tools for elevating human resources management. This spans from recruitment processes and skill development to employee motivation. Furthermore, the concepts of Diversity, Equity, and Inclusion (DEI) have emerged as critical practices that strengthen a robust and sustainable organizational culture. Reskilling and Upskilling are additional strategies that help personnel adapt to changes in the labor market and technology. Simultaneously, prioritizing employee mental health and well-being is equally crucial, as fostering work-life balance directly impacts job satisfaction and work efficiency.

Organizations that prioritize employee rights and well-being with fair compensation, equal opportunities, and a safe working environment can enhance employee well-being while also protecting fundamental human rights. These elements collectively lead to increased employee satisfaction and engagement, along with a high quality of life. This reflects efficient human resources management which in turn fosters organizational sustainability, encompassing economic prosperity, environmental responsibility, and the overall well-being of society.

2. OUR POSITION

WHAUP recognizes the significance of employees as the primary driver for achieving sustainable organizational growth. Therefore, we prioritize developing and applying new human resources management strategies to respond effectively to changes in the business world and meet employee needs appropriately. A key objective is to maintain the leading position in the utilities and power business and to become a Tech-Driven Organization by 2025, under the concept of "Mission To The Sun." This mission emphasizes organizational development that equally considers the balance between economic, social, and environmental outcomes.



We have adopted more flexible working models in line with future trends, under the concept of “Future of Work.” This encompasses remote working, work from home, flexible working hours, online meetings and collaboration, and virtual hiring. These changes aim to enhance work efficiency by aligning with individual employee strengths, while simultaneously promoting both physical and mental well-being. Additionally, we have established strategies to prepare for potential future changes, focusing on developing employee capabilities to align with essential digital-era skills, which require expertise beyond traditional skill sets. Furthermore, human resources management processes from concepts and objectives to operational procedures have been refined to boost efficiency and respond effectively to the highly competitive business.

For sustainability dimension, we have issued a Human Rights Policy to guide human resources management in alignment with the principles of respecting and protecting human rights, as well as fostering equal opportunities and equity within the organization.

These strategies will help create a positive employee experience, increase job satisfaction, and are crucial for retaining high-potential personnel long-term. Furthermore, we also foster values and organizational culture through various activities and communication channels, such as training and capability development to ensure all employees understand and are committed to working towards shared goals.

3. MANAGEMENT APPROACH

3.1 GOVERNANCE STRUCTURE

WHAUP established a Human Resources Department which plays a crucial role in managing human resources in alignment with the long-term strategies of both WHAUP and WHA Group. The Board of Directors oversees and setting direction and supervising human resources management. This includes policy formulation, strategic planning, performance monitoring, and comprehensive impact assessment of policy implementation. Its roles can be divided as follows:

Roles	Responsibilities
Human Resources Department	The Human Resources Department plays a key role in planning and implementing human resources management strategies in alignment with the organization's long-term strategic framework. The focus is on developing human resources policies and processes that support the organization's objectives, including recruitment, selection, and management of employees with the knowledge, capabilities, and skills that meet organizational needs. Additionally, the Human Resources Department prioritizes talent development through training, coaching, and performance evaluation, as well as overseeing employee welfare, benefits, and fostering positive relationship between employees and the organization. The department also supports an organizational culture that emphasizes sustainability, diversity, and collaboration.
Board of Directors	The Board of Directors is responsible for setting policy direction and strategic framework for human resources to align with the organization's goals and vision. They continuously monitor the implementation of human resources initiatives to ensure their appropriateness and alignment with the strategic plan. Furthermore, the Board emphasizes assessing the impact of human resources policies on both the organizational and stakeholder levels. They also oversee that human resources management adheres to international standards and relevant laws and regulations. In addition, the Board supports the long-term talent development to promote human resources sustainability and ensures transparency and equity in human resources management at all levels of the organization.

With a clear and efficient management and governance structure, WHAUP is confident to drive the organization towards becoming one where all employees feel proud and engaged. This will enable us to achieve its sustainable economic, social, and environmental goals responsibly and tangibly.

3.2 RISK AND OPPORTUNITIES MANAGEMENT STRATEGY

In an era of rapid transformation across business and society, effective human resources management is a key driver in strengthening an organization's competitiveness. This includes the ability to attract and retain high-quality personnel, develop essential and relevant skills, and establish systems and working environments that support operational efficiency. These are all crucial components that help drive the organization forward. However, human resources management still entails risks that must be addressed, such as shortages of skilled labor, delays in employee skill development, and declining employee engagement all of which can adversely impact the organization's long-term success. Therefore, identifying and managing both risks and opportunities in human capital is essential. Organizations that can upskill their workforce in line with market demands and organizational strategic directions will be better equipped to build a strong foundation and achieve long-term sustainable growth.

These changes also present opportunities for organizations to develop future-oriented human resources management strategies. This includes prioritizing investment in enhancing employee skills and capabilities to improve work efficiency and enable them to adapt to technological and market changes. In addition, fostering a work environment that promotes employee happiness and engagement, along with cultivating a strong organizational culture, helps strengthen employee loyalty and motivates them to perform at their full potential. Offering opportunities for career growth and development within the organization will also build employee motivation and loyalty. At the same time, developing effective policies to attract high-potential talent enhances the organization's competitiveness and ability to respond to market demands in a sustainable way.

3.3 RISK MANAGEMENT

WHAUP and WHA Group places strong emphasis on effective human resources management and has implemented a 5-year strategic framework (2022 - 2026) with the objective of becoming one of the most desirable employers in Thailand and the region. To

achieve this, the Group has continuously executed its strategic roadmap to improve and enhance its human resources systems, ranging from incentive programs and employee retention strategies to ongoing investments in human capital development and fair labor practices. These efforts aim to address labor shortages, improve overall human resources quality, and strengthen employee capabilities. At the same time, WHAUP is firmly committed to upholding ethical standards and strictly preventing all forms of human rights violations, including discrimination, harassment, and illegal or forced labor.

Driven by this commitment and consistent execution strategic guidelines, WHAUP has played a key role in propelling WHA Group to receive prestigious employer awards for two consecutive years. In 2023, WHA Group was honored with the Kincentric Best Employer Thailand 2023 award from Kincentric (Thailand) Co., Ltd. Following this success, in 2024, WHA group also received both the "Best Companies to Work for in Asia 2024" and the "HR Asia: Sustainable Workplace Awards" from HR Asia, a leading human resources magazine in Asia. a leading regional publication. These accolades reflect the Group's excellence in human resources management practices, ranging from employee care and job satisfaction to building a strong organizational culture that supports professional growth and engagement, highlighting the Group's standing as an internationally desirable workplace. These achievements reaffirms the Group's commitment to improving the quality of life for employees, communities, society, and the environment, in line with WHA's mission "WHA : WE SHAPE THE FUTURE".

WHAUP utilizes standardized and fair human resources management tools and processes that enable reliable performance evaluation. This approach ensures efficient and appropriate management of human resources aligned with the needs of the utility and energy business. Additionally, it helps align operational results with the strategy and vision set by WHAUP in collaboration with WHA Group, supporting the achievement of targeted goals effectively and fostering sustainable business development. WHAUP focuses on analyzing trends in current and future strategic human resources requirements, anticipating changes, and planning for various scenarios accordingly.

STRATEGIES FOR DEVELOPING HUMAN RESOURCE MANAGEMENT

- 1 • Strengthening the corporate brand to retain and attract high-potential personnel
- 2 • Instilling WHA DNA to support the transition to becoming a Tech Company
- 3 • Enhancing skills essential for the future world
- 4 • Adjusting work models to promote flexibility, agility, and maximum efficiency
- 5 • Developing high-potential employees and future leaders to be ready for change

WHAUP CORPORATE VALUE

WHAUP has established four core organizational values: Advanced, Champion, Resourceful, and Integrity, these values align with WHA Group. Additionally, we have defined four unique core competencies: Customer Solutioning, Data-Driven Entrepreneurship, Resilience, and Partnership Building. These competencies are designed to enhance leadership qualities and capabilities of the personnel in alignment with the corporate branding. These values are crucial in fostering innovation within the organization and driving the entire group towards digital transformation under the “Mission To The Sun” initiative. This project strengthens organizational and personnel

development across all companies within the WHAUP. All personnel within WHAUP will be guided and encouraged to uphold these organizational values, ensuring alignment and efficiency in their respective roles. Additionally, as part of WHA Group, there are plans to align these organizational values with corporate branding, while embedding contemporary digital concepts into the organization’s DNA (WHA DNA). This process plays a significant role in propelling the organization towards digital transformation and facilitating growth across various business sectors driven by strategies aiming to achieve the goal of becoming a Tech-Driven Organization by 2025.



| LABOR PRACTICES

WHAUP recognizes the great importance on treating all employees equally and has consistently developed practices that align with a non-discrimination policy. We are also committed to neither engaging in nor supporting any form of discrimination and actively promotes diversity within the organization ranging from employees at the foundational level to top executives in order to foster a corporate culture that respects differences and supports sustainable coexistence.

The company has also established a Nomination and Remuneration Committee (NRC), comprising members of the corporate board, tasked with proposing qualified individuals for senior executive positions without limitations or discriminatory practices based on nationality, religion, language, age, gender, marital status, personal sexual orientation, disability, union membership, employee representation, political affiliation, or other personal beliefs. Moreover, the NRC is responsible for proposing clear, fair, and appropriate compensation criteria and guidelines that align with

current labor market conditions. The NRC convenes at least four times annually and presents reports to the WHAUP's board committee.

To ensure that all employees are treated fairly, WHAUP has established channels for employees to make complaints in cases where they feel unfairly treated. In instances where complaints involve discriminatory practices, WHAUP follows guidelines to determine if the case falls under criteria defined by the International Labour Organization (ILO), and sets forth preventive and remedial measures, including measures to protect personal data, from initial consideration to final resolution. These measures are part of the WHA Group's Non-Discrimination Policy, which is rigorously implemented throughout WHAUP and its affiliated companies. Effective policy implementation helps prevent instances of discrimination, which is fundamental to conducting business responsibly. Each year, WHAUP and its affiliated companies review and improve their anti-discrimination policy to ensure



clarity and strength. In 2024, there were no reported cases of employee or contractor discrimination within the business operations of WHAUP, aligning with the organization’s goal of zero complaints related to employee discrimination.

EMPLOYEE WELFARE AND BENEFITS

WHAUP places great importance on promoting a high standard of living for employees and their families. This aligns with the goal of motivating and retaining talented and capable employees. Accordingly, WHAUP provides appropriate and above-minimum benefits and welfare, which not only supports employees’ satisfaction and security but also enhances WHAUP’s human resources management. All employees are informed of their rights to benefits and welfare from the start of their employment. Permanent employees receive standard benefits and welfare, including life and accident insurance, health insurance that covers registered family members, annual health check-ups, uniforms, provident funds, assistance funds, disability coverage, maternity leave, and parental leave for female employees (primary-caregiver) during and after pregnancy for 14 weeks, separate from other types of leave with the providing of breastfeeding rooms. Male employees (non-primary caregiver) can also take leave to help their spouses care for their children which also separate from other types of leave. We also allow employees who need to take care of sick family members to take personal leave as appropriate. Additionally, we organize occasional child-friendly events as part of the employee support initiatives, allowing employees to bring their children to the office

during working hours. In 2024, 12 employees from WHAUP and WHA Group participated in such activities. Moreover, we listen to employee feedback to improve benefits in alignment with their needs. All employees are encouraged to propose benefit improvements through the Employee Welfare Committee and the Human Resources Department.

Additionally, we also strive to foster a positive working environment and motivate employees by organizing various activities and programs in collaboration with WHA Group to promote employee well-being, such as the “WHAppy Talk” initiative. In 2024, we use the 2023 Employee Engagement Survey results as a primary basis for employee engagement initiatives, while also collecting additional feedback through the internal “ONE WHA Sentiment” assessment and participation in the HR Asia survey. We prioritize on surveying employee satisfaction across multiple dimensions, aiming to enhance employee well-being in line with the human resources management strategy. This includes improving the work environment and approaches to ensure that employees can pursue common goals with happiness, while creating a positive work experience throughout their career journey. Occupational health and safety are also key priorities. Furthermore, WHAUP promotes a happy and healthy workplace under the Happy Workplace principle. In 2024, together with the Group, “HR Tang Wong Lao”, “WHAppy Talk”, and other programs were organized to strengthen employee well-being and happiness through shared experiences in the alignment with WHA DNA.





EMPLOYEE WELFARE AND BENEFITS

WHAUP develops and adopts the technology to transform work practices under the concept of the “Future of Work”. This highlights the importance of recruiting individuals with the right skills and knowledge, as well as the ability to adapt to social changes such as technological skills and an understanding of digital systems.

WHAUP recognizes the importance of maintaining a low employee turnover rate. This not only ensures efficient business operations and sustains long-term competitiveness but also minimizes the high costs and time associated with recruitment and selection processes. Thus, WHAUP has made efforts to reduce the turnover rate by assigning the Human Resources department the responsibility of managing strategies to motivate and retain talented and experienced employees. Additionally, WHAUP adapt Strategic Workforce Planning (SWP) and People Analytics (PA) alongside HR management systems into the

development of all WHA companies towards sustainable business success. SWP is a long-term planning process spanning 3-5 years to anticipate future scenarios, which allows WHAUP to manage human resources efficiently and aligning the needs of WHAUP companies and achieving expected outcomes. This focuses on analysing trends in HR requirements and strategic business goals, both current and future. This resulted in a voluntary resignation rate of 6.48 percent in 2024, a significant decrease from the previous year where the rate was 8.08 percent in 2023.

STRATEGIC WORKFORCE PLANNING: SWP

As we are committed to managing human resources through a Strategic Workforce Planning (SWP) process, which includes the development of a 5-year strategic framework (2022–2026) aimed at enhancing organizational agility and promoting positive employee experiences. In collaboration with operational teams, we identify key expertise and necessary skill sets,



prioritizing them using a matrix assessment that considers critical factors such as the impact on organizational goals, sustainability of knowledge, and competitive advantage. For employees who already possess expertise in certain areas, we provide additional knowledge development programs or targeted training to close any skill gaps. These efforts are designed to achieve long-term objectives and strengthen the organization’s overall effectiveness.

In addition, we have adopted People Analytics (PA) and a Human Capital Management System (HCMS) to support workforce planning and decision-making. These tools allow us to collect and analyze data such as the number of job vacancies and the Human Capital Return on Investment (HCROI), enabling the adjustment of operational plans to better align with organizational needs. This approach enhances the overall effectiveness of human resources management from recruitment and performance evaluation to identifying skill gaps and mitigating employee attrition risks. As a result, we are able to operate more efficiently and achieve sustainable growth. This is clearly reflected in the employee engagement score, which reached 70% in 2024.

RECRUITING & HIRING

WHAUP has well-defined employment policies that emphasize the recruitment of individuals with potential,

matching the organization’s needs from both internal and external recruiting channels. For its primary recruiting channels, WHAUP employs a variety of methods such as direct recruitment through the organization’s website, engagement with other recruiting websites services in Thailand and participating in job fair.

WHAUP has methods to enhance efficiency in recruiting capable employees to meet workforce planning that supports operational plans and specified business goals by creating and communicating a clear and effective Employer Value Proposition (EVP) that aligns with the organization’s values. This aims to enhance the efficiency of employee recruitment in accordance with the workforce plan, supporting operational plans and business objectives. WHAUP gathers and analyses communication content based on the real needs of potential talents from both internal and external sources to ensure that the communication process aligns with the perspectives and expectations of external individuals towards WHAUP. WHAUP aims to creatively present the value in the EVP through various promotional channels. Additionally, WHAUP has launched a corporate image enhancement project to attract the most talented and suitable personnel, as well as to elevate the employment image to appeal to target talent groups by developing partnerships with educational institutions and experts in various fields as follows:

ACADEMIC PARTNERSHIP	PROFESSIONAL NETWORK	EMPLOYMENT OF UNDER-PRIVILEGED GROUPS
<p>WHAUP strives to reach out to high-potential new generations through various channels and projects, such as offering internships, allowing educational institutions to visit the operations, conducting training programs through coaching, organizing hackathon events, and promoting practical learning projects.</p>	<p>WHAUP collaborates with professional associations, business associations, and communities to promote our organization through knowledge sharing sessions, lectures, and social activities, aiming to develop relationships with experts.</p>	<p>WHAUP promotes employment opportunities for under-privileged groups by supporting the hiring of individuals from deprived backgrounds, including those facing social status issues or lacking formal education and qualifications, such as people with disabilities.</p>

To ensure that the recruitment process is efficient and aligned with business needs and current labour market behaviours, WHAUP utilizes data from the Human Capital Management System (HCMS) to analyse and develop the recruitment process. This includes evaluating the labour demand-supply situation, the effectiveness of recruitment channels, the efficiency of initial screening tools, and analysing applicant behaviour and labour needs. WHAUP tracks and collects data to review and analyse success, and to set improvement plans to better

meet business demands and organizational growth. Currently, WHAUP has integrated HCMS technology with cloud systems and mobile devices for easier use, and continues to develop the recruitment process to keep up with market conditions, trends, and the ever-changing future of work, aiming to become a Tech-Driven Organization by 2025.

MEASURING EMPLOYEE PERFORMANCE

WHAUP measures employee performance through annual performance reviews following the guidelines of the Performance Management System (PMS). The goal is to maximize every employee’s potential. Employee performance is analyzed against Key

Performance Indicators (KPIs). Performance results impact decisions on employee compensation and the development of future capacity-building programs. This also allows comparison of performance with the ratio of high-potential and high-performing employees. The process aims to strengthen WHAUP ‘s talent pool and reduce gaps in relationships between supervisors and subordinates. In 2024, 100% of employees received performance evaluations through various formats including both formal and informal ongoing assessments to ensure that employees receive timely feedback on their performance, expectations, and areas for improvement. The performance evaluation formats are as follows:

Type of performance assessment	Total number of employees (%)
Key Performance Indicators (KPIs) set Jointly by Supervisors and Subordinates	100
Multi-dimensional performance appraisals (e.g., 360-degree feedback)	Applied to High-Potential Personnel and Staff Participating in Leadership Development Program
Team performance evaluation	100
Agile (On-duty) conversations	100

WHAUP has adopted four types of performance evaluations to determine compensation linked to individual employee performance. These evaluations serve as a foundation for guiding the development of employee potential and skills in alignment with our growth strategy.

IDENTIFYING WORKFORCE SKILLS GAPS

Identifying the current workforce skills gaps, such as shortages in specific skills or knowledge, is a part of the Strategic Workforce Planning (SWP) process that both WHAUP and WHA Group follow. This ensures that WHAUP’s business operations can meet the objectives and move in the strategic direction set forth. WHAUP and WHA Group have established WHAUP Development Program as a short-term framework to identify high-demand positions that can be filled, as well as the skills or positions in demand at various times. This enables the development or preparation of necessary skills or knowledge to support WHAUP’s current and future business operations on schedule. In this process, WHAUP collects data

through the Human Capital Management System (HCMS), including the completion rates of training programs for each department, the completion of training programs as planned, and the number of training hours per employee. This data is then used to assess the workforce skills gaps and extend to the development of existing skills and the acquisition of new skills. Collecting and analyzing this information also helps WHAUP enhance employee capabilities and appropriately plan career advancement within the organization, while developing talented individuals for future succession planning.

IDENTIFYING FLIGHT RISKS TO IMPROVE RETENTION

WHAUP recognizes the importance of employee retention, particularly in fostering organizational engagement, which serves as a fundamental pillar of long-term efficiency and success. Employees who feel a sense of belonging are more likely to contribute their full potential, collaborate effectively, and work collectively toward shared organizational goals.

To ensure continuous and tangible results, WHAUP has used the 2023 survey results as a baseline for measuring the effectiveness of employee retention strategies. These strategies are constantly being improved and developed, focusing on 3 key factors influencing employee engagement: 1) tools, work equipment, and organizational structure; 2) work-life balance; and 3) compensation, benefits, and recognition. Additionally, we also collect employee data such as Attrition Rate

and Regrettable Loss through our Human Capital Management System (HCMS). This data is analyzed to identify causes, preventive measures, and employee motivations. Furthermore, we conduct annual employee engagement surveys to pinpoint issues and understand factors contributing to employee turnover. This helps us develop sustainable employee retention strategies and maintain our standard as a top employer both nationally and regionally.

2020

Employee Engagement Score
88.8%



% of Total Employee Coverage
92%

72%

60%

2021

Employee Engagement Score
69%



% of Total Employee Coverage
94%

72%

60%

2022

Employee Engagement Score
72%



% of Total Employee Coverage
100%

73%

69%

2023

Employee Engagement Score
70%



% of Total Employee Coverage
99%

72%

64%

2024

Employee Engagement Score
70%

% of Total Employee Coverage
99%

72%

64%

2025 Employee Engagement Target
More than 76%

2025 % of Total Employee Coverage Target
100%

In 2024, WHAUP conducted internal assessments through the WHA Group’s ONE WHA Sentiment Survey tool and participated in the international-level HR Asia Employee Engagement Survey to measure employee engagement. The results are as follows:

- ONE WHA Sentiment Survey: Achieved a 97% response rate and an average score of 85%, reflecting employees’ understanding of organizational goals, skill development, and teamwork.
- HR Asia Employee Engagement Survey: WHAUP received an average score of 88%.

The success in fostering employee engagement has played a key role in supporting WHA Group in achieving the goal of becoming an outstanding employer with the “Best Companies to Work for in Asia 2024” and the “HR Asia: Sustainable Workplace Awards” from

HR Asia, a leading human resources publication in the Asia-Pacific region.

The results of the employee engagement and satisfaction survey across all business groups are compared with past evaluations and reported to the executive committee and senior management in the relevant business groups and are shared with employees through SharePoint. These results are further analyzed to support the development of projects, policies, or procedures aimed at improving employee care, as part of our SWP process. The data collected from all employees through performance evaluations and employee engagement surveys is analyzed to promote career advancement or to develop beneficial programs, including job rotation projects, retirement plans, and filling positions within the organization. In 2024, 15.15% of job positions were filled through internal hiring.



SUMMARY TABLE OF DATA ANALYSIS APPROACHES FOR HUMAN RESOURCES MANAGEMENT

	Employee Performance Appraisal	Strategic Workforce Planning (SWP)	Workforce Skills Gaps	Recruiting & Hiring	Identifying Flight Risks to Improve Retention
The types of data that companies typically collect, related to each topic (such as number of employees, job types, working hours, etc.)	<ul style="list-style-type: none"> Potential employee rate (outstanding employee) Completed of work evaluation Timeline for KPIs evaluation. 	<ul style="list-style-type: none"> Number of employees Gender Organizational structure Location Gender ratio Country 	<ul style="list-style-type: none"> Training completion rate according to plan Completion of training by department Ratio of total training hours/ number of employees 	<ul style="list-style-type: none"> New employment rate Recruitment period Termination rate Recruitment Channel 	<ul style="list-style-type: none"> Attrition rate Loss of desirable employee
Indicators for tracking results	<ul style="list-style-type: none"> Percentage of goals achieved by employees. 	<ul style="list-style-type: none"> Number of open positions Human Capital Return on Investment (HCROI) 	<ul style="list-style-type: none"> Number of training course per employee The supervisor's satisfaction level with the employee's performance. 	<ul style="list-style-type: none"> Percentage of recruitment success rate. 	<ul style="list-style-type: none"> Turnover rate Turnover rate of skilled employee.
Objectives of data analysis	<ul style="list-style-type: none"> Verify the quality of performance evaluation and provide feedback to employees. 	<ul style="list-style-type: none"> Monitor human resources information and workforce planning. 	<ul style="list-style-type: none"> Provide employees with opportunities to enhance their skills or learn new ones, to fill skill gaps and strengthen the workforce. 	<ul style="list-style-type: none"> Enhance workforce planning effectiveness to ensure operational alignment with the established plan and business objectives. 	<ul style="list-style-type: none"> Evaluate employee engagement with the organization.
Benefits of data analysis include	<ul style="list-style-type: none"> Increase the number of skilled and competent personnel. Enhance employee engagement with the organization Reduce gaps in the relationship between supervisors/ managers and employee. 	<ul style="list-style-type: none"> Able to compare human resources data with business performance data. 	<ul style="list-style-type: none"> Develop employee capabilities and plan appropriate career progression within the organization. Develop personnel with abilities for job succession and career advancement. 	<ul style="list-style-type: none"> Recruit personnel for critical positions in a timely manner to support the business needs and organizational growth. 	<ul style="list-style-type: none"> Evaluate employee engagement with the organization.





EMPLOYEE DEVELOPMENT AND PROMOTION OF ADVANCEMENT OPPORTUNITIES

WHAUP firmly believes in the philosophy that humans are the most valuable assets of the organization and believes that employees play a crucial role in the sustainable growth of the organization. Moreover, WHAUP is also aware that investing in employee training and development not only helps motivate employees but also strengthens the organization by building a skilled workforce. Therefore, we are dedicated to developing diverse and comprehensive skill sets, to promote employee advancements in both personal skills and career paths, through skill development programs and training. Starting with identifying skill gaps, budget allocation is made for both upskilling and reskilling to ensure that all employees have a set of key skills relevant to the organization's strategies and business vision.

The learning and development program focuses on 5 key growth areas including 1) Management skills development, 2) Business and digital knowledge development, 3) Soft skills development, 4) Technical skills development, and 5) Talent management.

WHAUP has also analyzed the Human Capital Return on Investment (HCROI) to use as a metric and indicator of the appropriate level of investment in employee. In 2024, WHAUP achieved a return of 19.1 times and has set a target at least 16.3 times by the year 2025.

HUMAN CAPITAL RETURN ON INVESTMENT (HCROI)

	2021	2022	2023	2024	2025 Target
HCROI	22.6	17.2	19.7	19.1	16.3





To promote continuous self-development among employees and drive business results, WHAUP has adjusted its human resources strategy to accelerate people transformation through enhancing capabilities, developing existing skills, acquiring new skills, and supporting a creative work environment. In 2024, WHAUP planned to revise the organization's competency requirements concerning essential skills for current and future work, aligning with the WHA Group's strategy. The specific skill sets that WHAUP has developed include value-added products of WHAUP. In addition, WHAUP emphasizes the importance of enhancing digital knowledge and skills for all employees, ranging from basic to advanced skills, such as data analysis, programming, or increasingly complex digital skills required for specialized tasks for them to equip the ability to apply technology in their work.

TRANSITION ASSISTANCE PROGRAMS

WHAUP has implemented Transition Assistance Programs, which provide guidance and directions for employees' life after the end of their employment contract or retirement. The focus is to help these employees smoothly adapt to their post-retirement environment and be effective. Additionally, in some cases, it assists employees with capabilities to continue working after retirement. The activities of the Transition Assistance Programs include Money Planning, Pre-Post Retirement seminar, general meetings on pension funds, and supporting budgets for employees to participate in external training programs.



HUMAN RIGHTS

Human rights are fundamental rights and freedoms inherent to every person from birth. However, human rights violations are still prevalent in many parts of the world today. These can take the form of actions contradicting laws, international standards, and human rights covenants, as well as events leading to rights abuses. Such incidents can result in negative impacts, including reputational damage, complaints from human rights organizations, or protests from stakeholders. Therefore, we believe involves more than economic growth. It also requires taking responsibility for stakeholders and vulnerable groups throughout every stage of the value chain. Therefore, as a utilities and power business provider that engages with numerous direct and indirect stakeholders, we must elevate its human rights practices and actively promote its human rights principles and commitments.

HUMAN RIGHTS GOVERNANCE

With the effort to protect the human rights of stakeholders, we strictly adhere to WHA Group's Human Rights Principles. A governance structure has been established to ensure that all human rights-related operations are conducted appropriately and transparently. Oversight responsibilities at the highest level are assigned to the Corporate Governance and Sustainable Development Committee, which is responsible for setting policies, reviewing performance,

and providing strategic guidance to ensure that the human rights practices align with international standards, such as the United Nations Guiding Principles on Business and Human Rights (UNGPs) and other relevant global frameworks.

For day-to-day operations, we have formed a Human Rights Working Team comprising representatives from relevant departments, with clear responsibilities defined for each area. The team closely monitors human rights performance, analyzes and assesses potential risks within the business activities, and plays a key role in collecting data, preparing reports, and regularly communicating progress to management and stakeholders.

HUMAN RIGHTS DUE DILIGENCE (HRDD)

WHAUP conducts comprehensive Human Rights Due Diligence (HRDD) to assess risks and potential impacts related to human rights across the entire value chain. This process involves identifying relevant human rights issues and evaluating the potential effects on vulnerable groups requiring special attention, such as children, migrant workers and pregnant women. WHAUP also assesses the likelihood and severity of human rights impacts at three levels: organizational, operational, and individual. Human rights risk assessments are conducted using 2 key criteria: (1) the



likelihood of occurrence, and (2) the potential impact. These assessments encompass a wide range of human rights issues and are designed to proactively manage and mitigate potential violations. WHAUP’s HRDD process is aligned with internationally recognized standards and frameworks, including the Universal Declaration of Human Rights (UDHR), the United Nations Guiding Principles on Business and Human Rights (UNGPs), the United Nations Global Compact (UNGC), and the International Labor Organization’s Declaration on Fundamental Principles and Rights at Work. WHAUP regularly conducts human rights assessments and systematically reviews and updates its due diligence processes to ensure alignment with evolving standards, stakeholder expectations, and business operations.



HUMAN RIGHTS POLICY COMMITMENT

WHAUP is an important part in formulating a human rights policy with WHA Group, which is also a part of establishing comprehensive human rights due diligence process in the company and is in accordance with international standards on human rights, including laws and regulations at both local and global levels. The scope of WHAUP and WHA Group’s human rights policy covers all stakeholders, including all employees involved in WHAUP ‘s operations, as well as extends to business partners, contractors, and all business-related activities, including new business activities (such as mergers, acquisitions, joint ventures). Additionally, WHAUP has extended these human rights commitments to its customers, communities, and vulnerable groups, i.e., women, children, migrant workers, indigenous communities, persons with disabilities, elderly, and LGBTQI+. Furthermore, the Human Resources Department has communicated this policy to all employees in WHAUP.

Human rights and Labor policy and practice

To ensure that WHA Group operates responsibly and complies with the law, WHA Group has adopted international standards on human rights as follows:

- ปฏิญญาสากลว่าด้วยสิทธิมนุษยชน (Universal Declaration of Human Rights, UDHR)
- ข้อตกลงโลกแห่งสหประชาชาติ (United Nations Global Compact หรือ UNGC)
- หลักการชี้แนะว่าด้วยธุรกิจและสิทธิมนุษยชนแห่งสหประชาชาติ (United Nations Guiding Principles on Business and Human Rights, UNGP)
- หลักการและสิทธิขั้นพื้นฐานในการทำงานขององค์การแรงงานระหว่างประเทศ (The International Labor Organization’s Declaration on Fundamental Principles and Rights at Work)

Through the following practice

1. Use of forced labor
2. Use of child labor
3. Use of female labor
4. Proper and legal use of migrant
5. Discrimination or segregation
6. Freedom of association and collective negotiation
7. Working environment and workers’ quality of life
8. Responsibilities in providing care for workers to sexual threats and/or harassment
9. Remuneration
10. Working hours
11. Termination of employment a compensation payments
12. Business partners and contractors in the supply chain

Note: This human rights policy applies to all operations of WHA Group, including its subsidiaries and joint venture companies, as well as the activities of employees and business partners.

HUMAN RIGHTS RISK ASSESSMENT (HRRRA)

WHAUP recognizes the importance of conducting Human Rights Risk Assessments (HRRRA) as a critical component of its overall operations. These assessments are also integrated into the Environmental Impact Assessment (EIA) process. The HRRRA covers 100% of WHAUP’s operational sites and is conducted across all relevant activities and operations throughout WHAUP’s value chain from upstream to downstream.

Furthermore, WHAUP places strong emphasis on stakeholder engagement in identifying human rights issues that may impact its operations and surrounding communities. Human rights risks and impacts both potential and actual are assessed on a triennial basis through consultations with diverse stakeholder groups. Insights from these engagements are analyzed to comprehensively identify human rights risks and to develop concrete and sustainable measures for prevention and remediation. These efforts ensure that the WHAUP’s operations are aligned with international human rights standards.

Business Group	Upstream Level	Business Transactions	Downstream Level
sUtilities and Power Business 	<ul style="list-style-type: none"> Raw water procurement Fuel and solar energy purchasing 	<ul style="list-style-type: none"> Water production Waste management Electricity production Solar rooftop installation 	<ul style="list-style-type: none"> Project repairs/ maintenance Post-sales customer services Stakeholder Relationship Management

Furthermore, WHAUP has extended its identification of human rights risks to cover emerging business activities such as mergers, acquisitions, joint ventures, etc. Human rights criteria have been incorporated into the due diligence checklist for mergers and acquisitions, as these activities may impact WHAUP’s human rights performance. WHAUP also mandates an annual, systematic review of risk assessments to ensure that all potential risks are comprehensively identified and that the information remains current and relevant.



HUMAN RIGHTS ISSUE ASSESSMENT

WHAUP has identified and assessed human rights issues that may arise, including risks and impacts, as part of the business review process. The human rights issues considered by WHAUP cover the following:

EMPLOYEE RIGHTS

- Illegal forms of labor (i.e., forced labor, child labor, human trafficking)
- Freedom of association
- Right to collective bargaining
- Equal remuneration
- Segregation and discrimination
- All forms of harassment, including sexual and non-sexual harassment (e.g., verbal threats)
- Foreign human capital, and migrant workers
- Health and safety of employees (including the pandemics)
- Work environment and workers' quality of life
- Working hours

COMMUNITY RIGHTS

- Resettlement
- Socio-economic impacts
- Environmental impacts
- Livelihood and standard of living
- Community health and safety
- Foreign human capital

CUSTOMER RIGHTS

- Data privacy
- Health and safety of customers
- Waste, hazardous waste and contagious waste management

SUPPLIER & BUSINESS PARTNER RIGHTS

- Health and safety in the supply chain
- Fair hiring conditions for suppliers
- Working conditions and environment for contractors and suppliers
- Joint venture partnership's unsafety or unhealthy working conditions

VULNERABLE GROUPS

The vulnerable groups covered by the risk assessment include:

- Own employees
- Women
- Children
- Indigenous people
- Migrant workers
- Third-party contracted labor
- Local communities
- People with disabilities
- Elderly
- LGBTQI+ communities



We have undertaken initiatives to promote diversity and equal opportunities in the workplace, as well as to eliminate all forms of discrimination particularly in relation to race, religion, gender, age, sexual orientation, disability, and nationality. We also have established policies and practices that foster an inclusive and equitable work environment for all. Key initiatives include the employment of persons with disabilities and open, unbiased recruitment processes.

HUMAN RIGHTS RISK ASSESSMENT PROCESS



HUMAN RIGHTS CRITERIA

The assessment of human rights risk is based on WHAUP's human rights risk assessment criteria, which are aligned with international standards and best practices. These criteria are used to determine the materiality of each human rights issue and take into account both the likelihood and potential impact of each issue.

HUMAN RIGHTS RISK ASSESSMENT (HRRR) RESULTS

- 100% of WHAUP's operation sites and associated activities were assessed for human rights risks and impacts.
- Following the assessment, 100% of WHAUP's operation sites and associated activities identified as having medium-level human rights risks have had preventive and/or remedial measures implemented.
- All of WHAUP's operation sites and associated activities (100%) identified as having medium-level human rights risks have implemented appropriate preventive and/or remedial measures.
- The human rights risk assessment identified the following salient human rights issues with medium-level risk:
 - Health and safety of employees
 - Health and safety of customers
 - Health and safety within the supply chain
 - Community well-being and standard of living communities

100%

The group conducted human rights risk and impact assessments across 100% of its operation sites and associated activities.



100%

Following the associated activities were identified as having medium-level human rights risks (salient issues), as follows:

- Health and safety of employee
- Health and safety of customers
- Health and safety within the supply chain
- Community well-being and standard of living communities

100%

100% of the group's operation sites and associated activities identified as having medium-level human rights risks have implemented preventive and/or remedial measures.

HUMAN RIGHTS IMPACT ASSESSMENT (HRIA)

Apart from conducting human rights risk assessment, WHAUP has integrated the Human Rights Impact Assessment (HRIA) process into its core business operations to examine whether stakeholders are affected by the Group's business activities in terms of human rights.

WHAUP manages human rights impact assessments through continuous stakeholder engagement to oversee its business operations throughout the entire value chain and to prevent any negative human rights impact on all relevant stakeholder groups. WHAUP is committed to continuously developing human rights measures based on stakeholder concerns. In the event of any human rights impacts, WHAUP promptly takes corrective and remedial actions to prevent recurrence.

WHAUP engages with various stakeholders, including employees, suppliers, communities, and customers, to collect data on human rights impacts. Satisfaction surveys are distributed to employees, suppliers, and customers to gather their feedback, concerns, and opinions regarding WHAUP's operations, including human rights practices. Additionally, WHAUP holds tripartite meetings with representatives of local communities near its operational sites to listen to feedback on impacts related to living standards, water quality, and air quality. The Group also conducts supplier audits to ensure compliance with human rights standards.

The results of human rights impact assessment of WHAUP's operations on stakeholders are as follows:

- Noise, pollution, dust, light, vibrations and accidents that may arise from construction of warehouses, factories or buildings impact the health and safety of surrounding communities and customers.
- Low quality or sub-standard products and services.
- Accidents resulting from sub-standard construction of factories, warehouses or buildings impact on customer health and safety.

- Inadequate occupational health and safety measures during the pandemic affect employees' right to safe and healthy working environments.
- Suppliers/ contractors, or service providers may violate the labor rights (e.g., migrant workers, forced labor, and child labor, etc.) concerning labor practices and safe and healthy working conditions, potentially damaging WHA Group's reputation.
- Unsafe or unhealthy working conditions at joint venture companies.

INTEGRATION OF FINDINGS INTO HUMAN RIGHTS RISK ASSESSMENT AND POLICY

Once the risks and potential impacts have been identified, the findings are then used to guide the review and update of the Human Rights Policy. This ensures that WHAUP's Human Rights Policy and commitments align with current global trends, international standards and comply with the latest laws and regulations.

Furthermore, the results of the human rights risk assessment are integrated into WHAUP's management systems, approaches, procedures, and work processes. They are also used to inform and shape the Group's future business direction and strategy.

IDENTIFYING AND IMPLEMENTING MITIGATION MEASURES FOR HUMAN RIGHTS IMPACTS

As WHAUP is the provider of utility and power services for industrial estates, WHAUP have assessed that the Group faces comparatively lower human rights risks than other industries. This is due to the Group's strict compliance with applicable laws and regulations, such as urban planning laws governing land use zoning and the requirements stipulated in Environmental Impact Assessments (EIA). In addition, WHAUP has no significant involvement with migrant labor. Nevertheless, the Group has implemented a range of preventive and mitigation measures, along with continuous monitoring and follow-up processes for identified human rights issues. These efforts are summarized as follows:

Human Rights Issue	Affected Rights Holders and Vulnerable Groups	Tracking and monitoring, mitigation measures, and remediation actions
Health and Safety		
<p>Accidents that may occur within the industrial estate as a result of the operations of the industrial factories belonging to the client group include incidents such as gas pipeline explosions, chemical leaks, as well as fire incidents and/or accidents at the workplaces of WHAUP, such as water production plants and wastewater treatment facilities.</p>	<p>Community, Customer, Employee</p>	<ul style="list-style-type: none"> • Conduct risk assessment to identify various potential hazards that may occur during business operations and to implement control measures to eliminate or reduce those risks. The risk assessment is reviewed annually or whenever there are changes in operational activities. • Install the Emergency Control Center (ECC) in 9 industrial estates and 2 industrial lands. The control centers are used to assess and prevent emergency incidents. ECC systems are managed by OHS specialists that can immediately respond to the incidents that have occurred in real-time. • Implement emergency plans and conduct the emergency drills, annually. • Have communication channels that can be easily accessed by all stakeholders regarding health and safety issues. • Gather Safety Data Sheet (SDS) on hazardous chemical uses within the industrial estates in order to prevent any further risks from occurring.
<p>Health safety from the effects of noise pollution, air pollution, dust, smoke, light and vibration from project development and operation within the industrial estate.</p>	<p>Community, Customer, Employee</p>	<ul style="list-style-type: none"> • Develop measures and preventive plans specified in the Environmental Impact Assessment (EIA) report and fully comply with all measures. • Various innovations are developed and utilized to reduce the risk of creating an environmental impact on the community through the operation of industrial estates and customer groups. Operators employ measures such as a central control center (Unified Operation Center: UOC) to effectively control and monitor various safety-related indicators. • Resolve complaints from communities and tripartite committees in every case with concrete conclusions.
<p>Unsafe working conditions that can lead to accidents during work, such as accidents arising from the use of equipment. or various tools, electric shock, leakage</p>	<p>Employee</p>	<ul style="list-style-type: none"> • Organize training for employees on safety, updated laws related to safety for employees • Provide safety equipment such as glasses, safety shoes.
<p>Unsafe workplaces during the global pandemic</p>	<p>Employee</p>	<ul style="list-style-type: none"> • Provide vaccines for employees and their families to prevent the spread • Announce preventive measures of WHAUP in the event of a pandemic • Implement Business Continuity Plan (BCP) measures by specifying roles, duties, responsibilities when an incident occurs

Human Rights Issue	Affected Rights Holders and Vulnerable Groups	Tracking and monitoring, mitigation measures, and remediation actions
Health, Safety, and Working Conditions in the Supply Chain		
<p>Accidents from construction activities which could lead to work-related injuries or loss of life (for example, falling off height, cuts from sharp objects, burn wounds)</p>	<p>Contractor, Supplier</p>	<ul style="list-style-type: none"> • Human rights initiatives for contractors/ subcontractors to promote the well-being of workers in construction worker camps, especially children residing in the camps (Baan Dek project) • Develop safety manual for contractors which they must strictly follow • Assess safety risks and develop safety procedures for each work task/type. • Implement an approval process for all suppliers and contractors before entering work premises. • Continuously assess and monitor the safety systems within the industrial estates and industrial lands
Standard of Living and Quality of Life		
<p>Water management, competition for water with local communities and wastewater releases into natural sources</p>	<p>Community</p>	<ul style="list-style-type: none"> • Committed to managing water efficiently and effectively. • Set target to reduce water uses from natural sources through Recycled Water/ Reclamation Water. • Strictly follow waste management requirements and procedures for industrial estates • Control and monitor water management parameters in accordance with EIA requirements. • Develop and continuously improve the efficiency and effectiveness of the water production and water treatment systems



TRACKING AND MONITORING OF HUMAN RIGHTS PERFORMANCE

WHAUP has assigned the relevant departments to regularly monitor and review WHAUP's human rights measures. The reports are presented to the responsible executives for acknowledgment and follow-up. Human rights criteria are also included as part of WHAUP's performance indicators at all levels of employees. Additionally, WHAUP has established a reporting channel that stakeholders can easily access to report any actions that may be considered violations of human rights or contrary to the human rights policy. The grievance mechanism is detailed in the Code of Conduct section of this report.

CORRECTIVE ACTION AND REMEDIATION

WHAUP recognizes that its business activities and operations may cause human rights violations its stakeholders/ rights holders and vulnerable groups. Thus, WHAUP is committed to preventing and mitigating the potential human rights risks associated with these activities, across the value chain.

In the case of human rights violations, WHAUP have implemented various measures to ensure proper remediation actions to restore affected groups that have been harmed by the business's activities to the situation they would have been in had the impact not occurred. This includes grievance mechanism and complaint channels through telephone, email, and website, as well as, directly informing relevant staffs and employees. WHAUP will assess the causes and address the issues through an anonymous process. Additionally, after the assessment, WHAUP will ensure that effective remedy, and compensation have been provided, as well as insurance coverage to those that were harmed. Moreover, WHAUP verifies its human rights results, and review the assessment and due diligence process every year. This is to ensure that its human rights practices are the most effective and updated. Finally, In 2024, there are no human rights violations, therefore, there are no remediation actions.

HUMAN RIGHTS AWARENESS

WHAUP fosters awareness and understanding of human rights among all employees to align with the principles and commitments regarding human rights of WHA Group. Human rights policies are communicated as part of the continuous orientation of new employees since the year 2020, led by the Human Resources department. Moreover, there were 30 new employees from WHAUP, accounting for 100 percent participated in the employee orientation program in 2024. In summary, all employees of WHAUP completed a total of 30 training hours in human rights policy and procedures. Additionally, the Human Resources department has promoted the importance of various topics such as nationality, religion, language, age, gender, marital status, personal attitudes towards gender, disabilities, union membership, employment as a board member, political affiliation, or other personal beliefs. Various documents have been prepared and attached with human rights policy documents through the internal document management system, SharePoint, to enhance awareness of human rights and encourage employees to review the policies.

FREEDOM OF ASSOCIATION AND RIGHTS TO COLLECTIVE BARGAINING

WHAUP prioritizes upholding the human rights of all stakeholders affected by its business operations, including issues such as human trafficking, forced labor, freedom of association, the right to collective bargaining, equal compensation, and non-discrimination. These concerns are addressed through WHAUP's comprehensive human rights policies and measures, which extend to stakeholders both within Thailand and abroad, encompassing all countries where WHAUP operates. To ensure that all stakeholders receive their full and equal rights, WHAUP has implemented a Human Rights Due Diligence (HRDD) process. This process includes a Human Rights Risk Assessment (HRRRA) that evaluates compliance with the 35 human rights clauses outlined in the Universal Declaration of Human Rights (UDHR). Through this assessment, WHAUP identifies and addresses any potential risks or violations, taking appropriate measures to rectify the situation and restore affected groups to a state free from the adverse effects of business activities.

In relation to issues concerning restrictions on freedom of association and the right to collective bargaining, WHAUP grants all personnel the right to lodge complaints or unite to address injustices, such as excessive working hours, inadequate compensation relative to workload, workplace insecurity, and more, through various complaint channels. Additionally, WHAUP will establish a committee to evaluate these complaints. The review process will adhere to the rules and regulations specified by the International Labor Organization (ILO).

WHAUP’S LABOR PRACTICES

WHAUP is committed to conducting its business in alignment with international human rights and labor principles to create fairness, safety, and a positive working environment for all employees. We have taken actions on the following key issues:

OPERATION	APPROACH
Child Labor Prevention	WHAUP is committed to preventing and eliminating all forms of child labor. WHAUP has established a clear policy to hire employees who meet the minimum age required by law and audited to prevent any employment practices that may violate this right.
Forced Labor Prevention	WHAUP has an anti-forced labor policy throughout its operations and across its supply chain. Employment must be voluntary and fair, supported by monitoring and inspection systems to ensure no violations.
Building Engagement of Employee Representatives	WHAUP encourages strong relationships between employee representatives and management. Mechanisms and communication channels have been established to allow employee representatives to express their opinions or discuss work-related matters with transparency and security.
Reduction of Excessive Working Hours	WHAUP sets up working hours management guidelines in accordance with labor laws and supports employees in having adequate rest and a healthy work-life balance.
Support for Fair Wages	WHAUP is committed to providing fair compensation that aligns with local living standards, based on equity and value creation. We ensure fair remuneration for employees at all levels without discrimination, considering differences such as gender, age, race, and abilities. This supports employee well-being and promotes sustainable, efficient work performance. We also regularly review its wage policies and audit processes to ensure that all employees are fairly compensated in strict accordance with applicable laws.

WHAUP’S COMMITMENT TO FRAMEWORKS ON LABOR STANDARDS

With the clear commitment of WHAUP to promoting and complying with international labor standards. We continuously engage in multiple programs, partnerships, and activities to raise awareness and enhance sustainable labor practices. Representatives from WHAUP have participated in workshops and activities related to labor standards organized by government agencies, private sector organizations, and international bodies. These include workshops on labor rights and human rights, and labor rights knowledge sharing events for migrant workers to improve the understandings for further development of operational processes.

3.4 METRICS AND TARGETS

WHAUP has set targets for human resources management as follows:

Topic	2024 Performance	2024 Target
Internal Hire	15.15%	2.00%
Employee Engagement Level	70.00%	76.00%
Voluntary Turnover Rate	6.48%	7.00%

In 2024, the performance was evaluated based on the average training hours per employee per year, as detailed in the table below.

Category	Average training hour per year (Hour)	Average training hours per year per FTE (Hour)	Average investment in training and development per FTE (Baht)
Gender			
Male	38.15	38.15	6,538.33
Female	32.15	32.15	2,554.94
Age			
Below 30	27.05	27.05	2,282.67
30-50 years	40.06	40.06	6,862.02
More than 50 years	41.51	41.51	6,855.79
Level			
Staff	34.32	34.32	3,086.08
Middle management	49.18	49.18	10,151.61
Top management	39.00	39.00	64,535.42
Race, ethnicity, nationality, place of origin, cultural background			
Thai	37.01	37.01	5,722.22
Type of Training			
In-house training	34.32	34.32	4,112.30
External training	2.29	2.29	1,609.92



2021



Total number of new hires
25
% of Open positions filled by internal candidates (Internal Hire)
4%



Total number of new hires
9
% of Open positions filled by internal candidates (Internal Hire)
11.11%

Average hiring index per FTE (THB)
4,407

2022



Total number of new hires
24
% of Open positions filled by internal candidates (Internal Hire)
0%



Total number of new hires
7
% of Open positions filled by internal candidates (Internal Hire)
42.86%

Average hiring index per FTE (THB)
19,774

2023



Total number of new hires
31
% of Open positions filled by internal candidates (Internal Hire)
0%



Total number of new hires
7
% of Open positions filled by internal candidates (Internal Hire)
5.26%

Average hiring index per FTE (THB)
21,524

2024



Total number of new hires
22
% of Open positions filled by internal candidates (Internal Hire)
5.88%



Total number of new hires
11
% of Open positions filled by internal candidates (Internal Hire)
8.82%

ดัชนีการจ้างงานเฉลี่ยต่อค่า FTE (ค่าเทียบเท่ากับพนักงานเต็มเวลา) (บาท) **20,025.63**

TARGET 2025



Total number of new hires
43

% of Open positions filled by internal candidates (Internal Hire)
12.2%

Total employee turnover rate

0%

Voluntary employee turnover rate

6.48%

Total turnover rate by gender



0%



0%

Voluntary turnover rate by gender



5.09%



1.39%

Total turnover rate for management level



Top management
0%



Middle management
0%



Junior/Low management
0%

Total turnover rate by race/ ethnicity/ nationality/ country/ culturale background



Thai
0%



Vietnamese
0%



Others
0%



4. HIGHLIGHT PROJECTS

In addition, WHAUP has developed various projects to promote human resources management and enhance a positive working experience for employees with WHA Group in various aspects, as follows:

PROJECT TO STRENGTHEN COMMITMENT AND SATISFACTION THAT EMPLOYEES HAVE TOWARDS THE ORGANIZATION:

- In 2024, WHAUP is a part of holding Townhall Meetings, following from 2023. Ms. Jareeporn Jarukornsakul, the Group Chief Executive Officer from WHA Group and Mr. Somkiat Masunthasuwun, Chief Executive Officer of WHAUP were the speakers of the event. The objective was to encourage employee participation and awareness of the business strategies of each business unit for the following year, aiming to strengthen the employees' commitment to the organization.

WHA GROUP 2024 TOWNHALL MEETING
 WHA : SHAPE THE FUTURE FOR SUSTAINABLE GROWTH
8 MARCH | TIME : 9.00 - 11.00 AM

กำหนดการ

Time	Topic	Speaker
09.00 – 09.25 น.	<ul style="list-style-type: none"> ภาพรวมและความสำเร็จของธุรกิจในปี 2023 กลยุทธ์และทิศทางธุรกิจในปี 2024 WHA Group II: WHA Logistics โดย คุณจรีพร จาติกวรกุล	คุณจรีพร จาติกวรกุล
09.25 – 09.45 น.	กลยุทธ์และทิศทางธุรกิจในปี 2024 WHA Industrial Development โดย คุณปงวิช พงษ์จิ๋ววากิจ	คุณปงวิช พงษ์จิ๋ววากิจ
09.45 – 10.05 น.	กลยุทธ์และทิศทางธุรกิจในปี 2024 WHA Utilities and Power โดย คุณสมเกียรติ เมสันธสุวรรณ คุณอัศวินทร์ ประทีปสิทธิ์	คุณสมเกียรติ เมสันธสุวรรณ คุณอัศวินทร์ ประทีปสิทธิ์
10.05 – 10.25 น.	<ul style="list-style-type: none"> กลยุทธ์และทิศทางธุรกิจในปี 2024 - WHA Digital แนวทางการมุ่งสู่ Tech Company ในปี 2024 (AI Transformations) โดย คุณณัฐกมล ใจนวลารินทร์	คุณณัฐกมล ใจนวลารินทร์
10.25 – 10.45 น.	<ul style="list-style-type: none"> Circular Economy ของ WHA แนวทางการดำเนินงานธุรกิจอย่างยั่งยืน ผลการดำเนินงานทางการเงินและแผนการลงทุนของคู่ธุรกิจ โดย คุณไตรลักษณ์ อัครฉัตรโรจน์ คุณณัฐพรชัย ต้นบุญเอก	คุณไตรลักษณ์ อัครฉัตรโรจน์ คุณณัฐพรชัย ต้นบุญเอก
10.45 – 11.00 น.	<ul style="list-style-type: none"> ถาม - ตอบ กล่าวสรุปและปิดการประชุม โดย คุณจรีพร จาติกวรกุล	คุณจรีพร จาติกวรกุล

- We are also a part of holding the Mid-Year Townhall in August 2024 to communicate the business overview and the success of our organization in the first half of the year, as well as the strategies and business directions for the remainder of the year.

**WHA GROUP 2024
MID YEAR TOWNHALL MEETING**
16 AUGUST | TIME : 9.00 - 10.30 AM

กำหนดการ

09.00 – 09.30 น. • สารจาก Group CEO
• ภาพรวมและความสำเร็จของธุรกิจในปีแรก
รวมถึงกลยุทธ์และทิศทางธุรกิจในช่วงที่เหลือ
ของปี 2024 - WHA Group และ WHA Logistics
โดย คุณจริพร จารุตรสกุล

09.30 – 09.45 น. ภาพรวมและความสำเร็จของธุรกิจในปีแรก
รวมถึงกลยุทธ์และทิศทางธุรกิจในช่วงที่เหลือ
ของปี 2024 - WHA Industrial Development
โดย คุณปงวิช พงษ์พิทักษ์

09.45 – 10.00 น. ภาพรวมและความสำเร็จของธุรกิจในปีแรก
รวมถึงกลยุทธ์และทิศทางธุรกิจในช่วงที่เหลือ
ของปี 2024 - WHA Utilities and Power
โดย คุณสมเกียรติ เมสันตสุวรรณ
คุณอัครินทร์ ประเทืองสิทธิ์

10.00 – 10.15 น. ภาพรวมและความสำเร็จของธุรกิจในปีแรก
รวมถึงกลยุทธ์และทิศทางธุรกิจในช่วงที่เหลือ
ของปี 2024 - WHA Digital
โดย คุณนันทสิริ วัฒนาวินทร์

10.15 – 10.30 น. • ถาม - ตอบ
• ทักข้อสรุปและปิดการประชุม
โดย คุณจริพร จารุตรสกุล

คุณจริพร จารุตรสกุล
คุณปงวิช พงษ์พิทักษ์
คุณสมเกียรติ เมสันตสุวรรณ
คุณอัครินทร์ ประเทืองสิทธิ์
คุณนันทสิริ วัฒนาวินทร์

- WHAUP continues to consistently elevate digital technology capabilities to enhance the efficiency of Human Resources operations. We collaborate with WHA Group to develop Intranet called “WHA Space” as a an internal communication channel within the WHA Group and its subsidiaries. This platform enables employees at all levels to access news, information, and announcements from the company. Additionally, the Human Capital Management System (HCMS) has been developed to enable employees to independently manage certain human resources-related tasks, aiming to provide convenience, reduce coordination efforts, and increase employee satisfaction with the organization.



EMPLOYEE TRAINING AND DEVELOPMENT

WHAUP prioritizes employee skills to elevate the business to keep pace with the rapid changes in the economic landscape. Therefore, WHAUP and WHA Group conducts both mandatory and voluntary training programs to develop various skills for employees in 2024, including

MANAGEMENT SKILLS DEVELOPMENT

WHAUP with WHA Group organized training programs focusing on developing capabilities and skills in management and administration. These programs included:

- “Risk Management: Materiality and Sustainability Risk Analysis” training as a compulsory course for all executives and employees. The course aimed to equip participants with the knowledge to identify and analyze material sustainability issues and ESG-related risks. The session was conducted by Ms. Ratthaporn Malayaphan from KPMG, with a total of 130 participants attending the 2-hour training session.
- A training course on “Business Continuity Management (BCM) and Business Impact Analysis (BIA)” was provided to executives and relevant employees from all WHA Group businesses. A total of 16 executives and employees participated in the training, which aimed to enhance their understanding of the business continuity management process, business impact analysis, risk assessment and management, formulation of business continuity strategies and corrective actions, development of a business continuity plan, and implementation of drill programs. The total training duration was 6 hours.



- The Empathetic Leadership Program was designed to develop leaders who have potential to guide their teams with purpose and inspiration through self-awareness and understanding of their team members. The program was tailored for C-Level and N-1 executives, with 3 executives participating. Participants learned to lead with empathy, ask thought-provoking questions, and developed practical, applicable skills. Additionally, the program included the “Wheel of Being” assessment conducted by the facilitation team to support deep behavioral reflection and self-development. The evaluation focused on the practical application of skills, with follow-ups after each coaching session to ensure that participants could apply what they learned effectively.





TECHNICAL AND FUNCTIONAL SKILLS DEVELOPMENT

In 2024, WHAUP together with WHA Group organized training programs focusing on various abilities and development areas for employees to enhance technical and functional skills and reinforce necessary knowledge. For instance, occupational health and safety training was conducted as a mandatory program, aiming to elevate technical and functional skills and provide essential knowledge as follows

- The “1-on-1 Meeting” training course has been continuously provided to executives and employees at all levels to enhance understanding and promote practical application, aiming to establish a sustainable organizational culture. In 2024, 2 training sessions were conducted specifically for new employees and those who had not previously attended the training, with a total of 26 employees participating. Including those who have already completed the training, 86.14% of all employees have now attended the course. Therefore, we plan to continue this initiative annually to ensure the approach becomes an integral part of the long-term work culture. The training covers 4 key areas:

1. Providing a platform (both formal and informal) for managers and employees to discuss Work & Life matters. “Work” encompasses motivation & inspiration at work, work goals, personal development plans, communication of work progress and limitations, job performance feedback, and coaching. “Life” includes conversations to understand personal life progress, current challenges, life goals, etc.
2. Elevating the relationship between managers and subordinates by facilitating discussions between each manager and their team members.
3. Increasing the effectiveness of communication between managers and subordinates, both in terms of quantity (frequency) and quality (communication outcomes).
4. Understanding and preventing potential issues that may arise in the future.



- The safety training program was conducted to cover workplace safety issues, including working at heights, reviewing safety in crane operations, working in confined spaces, basic fire extinguishing, advanced fire extinguishing, fire drill and hazardous chemical handling, basic first aid, etc. This training program was provided to employees ranging from managerial to operational levels particularly target the supervisory-level and managerial-level occupational safety officers to participate in safety training programs. In 2024, the total number of safety training hours amounted to 3,764 hours, with a total of 901 employees from WHAUP attending various training courses.



- The Operational Excellence project aimed to develop the knowledge and skills of employees and foster a culture of operational excellence within WHAUP, striving to deliver the highest satisfaction of products and services to customers. This project covered five dimensions: SSHE (Safety, Security, Health, and Environment), Performance & Reliability, Work Process, Sustainability, and Organization & People. It focused on reviewing knowledge and enhancing deep technical expertise for engineering, operational, and maintenance groups to cultivate expertise within the organization. In 2024, training was conducted to develop personnel’s knowledge and skills according to the Technical Skill Matrix, comprising four courses: “Hydraulic Model: Basic EPANET” (6 hours), “Basic GIS” (18 hours), “Advanced GIS” (12 hours), and “Drainage System & Warehouse Floor Standard” (3 hours). With a total of 17 participants took part in these programs with 102 training hours. These initiatives are scheduled to be carried out through the end of 2024.

- The Short-Term Rotation Program was initiated by WHAUP in 2024 to promote development and knowledge exchange between the Thai and Vietnamese teams through training and hands-on experience. The program focused on upskilling, career advancement opportunities, and building internal networks. We welcomed three executives from Vietnam including a Site Manager, a Safety Department Team Lead, and a Maintenance Department Team Lead. The training was from 16–20 December 2024 under the supervision of Thai executives and specialists. The program received a satisfaction score of 93.3%, reflecting its value in enhancing personnel capabilities and strengthening the organization at the international level. We plan to follow up on the outcomes through a comprehensive evaluation process to assess the skill development of participants and the operational impact, using appropriate tools to ensure that the program delivers sustainable value to the organization.



- **Return of Experience Activity: REX Day** aimed to exchange valuable information among operational units following the completion of the Operational Excellence project, helping to enhance knowledge and understanding in collaborative work practices. It involved exchanging knowledge from direct experiences through representatives from WHAUP and other main business groups included WHAID, WHALG, and WHADG. This activity had a total of 28 WHAUP participants with 168 training hours.

In 2024, WHAUP organized training programs to develop comprehensive digital knowledge to enhance employees' knowledge and understanding in business, digital, and IT fields, including.

DIGITAL AND DATA LITERACY DEVELOPMENT PROJECT

WHAUP and WHA Group have provided training programs to develop digital literacy and data management skills, which play a crucial role in enhancing employee capabilities. These skills empower employees to efficiently utilize digital tools in their work and respond to business challenges with through technology. This competency has been a key driver of our success, contributing to the highest net profit in 2024, reflecting an impressive growth of over 50% compared to the previous year. In 2024, we organized the training into various programs and courses as follows:

- **The “Digital Day” Activity** was organized to highlight the importance of adapting to the digital era, exploring both opportunities and challenges it presents, while inspiring employees to fully leverage digital technologies. Participants engage in group activities designed to encourage knowledge sharing and collaboration. In addition, the activity introduced employees to “Everyday Apps,” internally developed applications designed to enhance convenience and efficiency at work. These digital tools and concepts can be practically applied to daily tasks, helping to cultivate an organizational culture that embraces technological change. Each session lasted approximately 3 hours, with a total of 7 sessions conducted and 114 participants from WHAUP.
- **The Incident Report Usage on the EAMS System Course (2 sessions) and the Management of Change (MOC) Usage on the EAMS System Course (2 sessions)** were organized to ensure that all employees can accurately and effectively use the new system. Previously, we handled MOC and incident reporting through paper forms and Excel files, which limited the process tracking, approvals, and systematic data storage leading to delays and operational inefficiencies. To enhance data management efficiency, we developed the MOC Module and Incident Report applications on the EAMS platform. This transition from document-based processes to a centralized digital platform has enabled more streamlined operations, improved traceability, easier data management, and reduced reliance on paper and Excel files. Each course is approximately 1 hour, with a total of 4 sessions conducted and 60 participants from WHAUP.



- **The E-Memo Usage on the Corporate Document Management System (CDMS) Course** is targeted to help employees understand the importance of the CDMS, which serves as a central digital platform for managing corporate documents, and the concept of E-Memo. The training supports supervisors and relevant personnel in efficiently approving and managing documents, reducing paper usage, and supporting the organization’s transition toward a fully digital work environment. The course lasted approximately 1 hour and was conducted in 1 session, with a total of 45 WHAUP participants.
- **The Art of Presentation Course** offered to employees at all levels who are interested in enhancing their data management skills. This course enables participants to transform complex data into easily understandable insights and to professionally design and present information using data visualization techniques. The aim is to communicate data clearly and engagingly. The course was conducted by internal experts and held in 3 sessions, with a total of 16 employees from WHAUP participating. The training lasted 6 hours. Upon completion, all participants were required to submit a presentation project based on a given assignment.

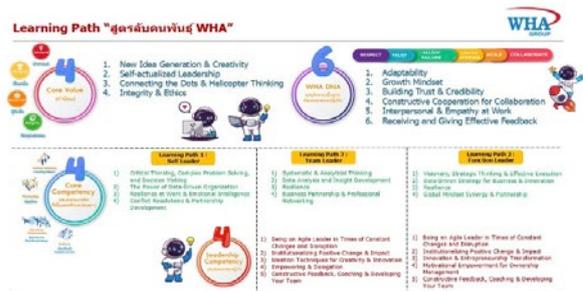


These training programs have enabled WHAUP to achieve the main strategy of transforming to the Digital Transformation. This training serves as a foundation for knowledge and understanding for employees to be prepared for upcoming changes. Furthermore, this

training plan is considered a successful accomplishment of the organization’s Data Driven Organization strategy.

CHARACTER AND COMPETENCY DEVELOPMENT PROGRAM

In collaboration with WHA Group, WHAUP has provide an online learning platform from external provider for employees to pursue self-learning through accessible and convenient e-Learning modules. The primary objective is to enhance employees’ skills and capabilities in alignment with the organization’s needs and each individual’s career path. The mandatory courses are designed according to the WHA Group’s Core Values (WHA DNA) and Core Competencies. These courses aim to build essential soft skills and mindsets necessary for effective work and long-term career growth, such as collaboration, leadership, effective problem-solving, adaptability, and an innovation mindset.



The platform also offers over 1,000 available courses on the platform, covering various topics aligned with their personal interests and individual development plans (IDPs). This approach supports personalized learning that caters to individual needs, whether in technical and professional skills, business management and strategy, creativity and innovation, or digital skills, among others.

Currently, “The Explorer” program has opened for applications in 2 batches, with a total of 27 WHAUP participated from operational staff to senior executives expressing interest and applying to participate. The program continues to be implemented as an ongoing initiative, offering diverse options to meet the varied needs of employees. This online learning platform is another key approach that fosters and reinforces our DNA, in parallel with other initiatives that support our culture. This specially designed curriculum allows employees to apply the core values in their daily work and strengthen the organization as a whole. It also enables continuous learning and development, helping both employees and the company advance together.

WORK-LIFE SOLUTIONS

WHAUP has been part of the development of a WHA Office Solutions, a premium office building project, serves as the location for WHA Tower, @Premium project, and SJ Infinite I project, among others. The spaces are designed to be flexible and cater to diverse work patterns, fostering an environment conducive to creative thinking, innovation, and collaborative work supported by modern technology. This initiative aims to enhance employee satisfaction and build confidence among capable personnel.



WHAUP promotes Work-Life Solutions for employees by relocating the main office to WHA Tower, located in the central business district of Bangna. This project has received the prestigious award for “Commercial High Rise Architecture Thailand.” The working environment is easily adaptable and equipped with various amenities such as co-working spaces, coffee shops, and beautiful landscapes including gardens and water features. Additionally, there are recreational areas for various activities, allowing employees to experience efficient work practices and a balanced work-life lifestyle, promoting good health and enjoyment of comprehensive entertainment facilities.

This also includes cutting-edge technology for safety and agility, integrating internal technology innovations controlled by digital systems, which excel in security management. It features facial recognition systems for access control, body temperature screening to maintain good health standards, parking spaces accommodating up to 500 vehicles and environmentally friendly technology innovations.



HAPPY WORKPLACE PROGRAM FOR EMPLOYEES (WHAppy)

WHAUP, in collaboration with WHA Group, has developed WHAppy project in 2021, resulting from the fusion of the words “WHA” and “Happy” to reflect the project’s objective of promoting employee happiness at work and strengthening their bond with the organization. Through developing employees’ capabilities and engaging in activities together, this project serves as a communication channel and activities related to change management to promote a positive “can-do attitude” within WHAUP’s community. These activities also enhance knowledge, skills, and foster diverse perspectives by involving both internal colleagues and external individuals, while also offering employees a space to relieve stress. In 2024, both WHAUP and WHA Group continued the WHAppy project and improved and developed activities based on employee feedback to align with their needs.

Under WHAppy project, various activities are conducted to develop employees’ skills and align with the Group’s change strategy toward becoming a Tech-Driven Organization. At the same time, the project aim to encourage a positive atmosphere within the group community and organize activities that promote happiness for all WHA employees. In the past year, the activities were categorized into 3 groups as follows:

Activities	Details
<p>WHAppy Talk</p>	<p>In 2024, a knowledge-sharing and inspirational talk event called “WHAppy Talk” under the theme “Kra-Hai-Lao” (Knowledge Sharing) was organized, featuring guest speakers from both within and outside the organization. This initiative provided a platform for various departments to present their work processes and share how they have integrated different technologies into their operations. The goal was to enhance employees’ understanding of the roles and workflows of other departments, promoting cross-functional learning. The event also showcased success stories of various projects that have contributed to the organization’s journey toward Digital Transformation, inspiring employees to embrace innovation and change in their own work.</p>  <p>The image shows four promotional posters for the WHAppy Talk Season 2 event. Each poster is for a different episode and includes the following information:</p> <ul style="list-style-type: none"> Episode 1: Held on Friday 26th January 2024, 15:00 - 16:30. Topics include Fashion Show, AI, and App-SCX. Episode 2: Held on Friday 1st February 2024, 15:00 - 16:30. Topics include HR TEAM and AI. Episode 3: Held on Thursday 30th May 2024, 15:00 - 16:30. Topic is EMPATHETIC LEADERSHIP. Episode 5: Held on Friday 30th August 2024, 15:00 - 16:30. Topics include MOBILIX and Green Logistics.

Activities	Details
<p>WHAppy Activities</p>	<p>These are relaxing yet meaningful activities. The activities cover a variety of topics. In 2024, WHAppy Activities offers “One WHA Run 2024”, “WellGene Challenge”, and “Employee Health Massage.” These initiatives not only promote better employee health within the organization but also encourage new ergonomic work styles that support well-being in the workplace. Additionally, we also continued the “Shine Brighter with WHA” project from 2023 by installing solar rooftops on school buildings. This year, solar rooftops were provided to Nikhom Sang Ton Eng Rayong 3 School and Ban Nong Lalok School in Rayong.</p> 
<p>WHAppy Festival</p>	<p>Events that held throughout the year to strengthen relationships and unity among employees during important festivals, such as the Songkran Festival, annual merit-making ceremonies, and New Year’s celebrations organized by WHA Group.</p> 

Since the launch of the WHAppy program in March 2021, more than 80 activities have been organized in both online and onsite events. These activities are aimed at creating opportunities for employees to meet, interact, and engage in shared experiences, thereby fostering positive relationships among staff. The program has achieved highly satisfactory outcomes, with consistently receiving positive feedback from employees who are considered as the core of the project. In addition to participating in the activities, employees have played an important role in shaping the program’s future development by sharing opinions, providing feedback, and offering useful suggestions.

The working team has gathered and analyzed feedback from all inputs to assist in planning of activities in 2025. Where we focus on enhancing employee potential both in terms of work performance and interpersonal relationships within the organization while ensuring the continuity of the WHAppy program to foster a friendly work environment and promote long-term employee engagement.

5. IMPACTS ON STAKEHOLDERS AND ENVIRONMENT

As the effective human resources management is one of the fundamental pillars of WHAUP alongside a strict commitment to respecting the human rights of employees and all stakeholders across the business value chain. This approach aims to enhance the overall employee experience, well-being, and personal development across various dimensions. We also strive to foster the highest levels of employee satisfaction and engagement, recognizing that employees are key drivers of sustainable business success. The definition of success is the achievement of a balance between economic, social, and environmental outcomes where the employee is the core factor to make this achievement happened.

A key factor contributing to our excellence in human resources management is the efforts to enhance the working environment, fostering convenience and a positive workplace atmosphere for employees. We continuously improve employee welfare to better align with their needs, ensuring satisfaction and a sense of security in their lives. In addition, we developed human resources systems and refined employee relations practices in accordance with ethical standards and human rights principles, including non-discrimination and compliance with labor laws which are the aspect of good corporate governance. To remain competitive in a dynamic business environment, we have implemented strategic talent acquisition initiatives and developed programs to enhance the capabilities of existing employees. These initiatives aim to broaden skill sets and strengthen existing competencies, benefiting both employees and the organization. Furthermore, we developed strategies to attract and retain high-potential talent employees, ensuring long-term organizational sustainability and readiness to adapt to the evolving global business landscape.

In the human rights dimension, we have implemented measures in alignment with WHA Group's human rights framework. This includes conducting human rights risk assessments, human rights impact assessments, and adhering to policies preventing and remedying potential human rights violations. These efforts are in place to ensure that our operations are comply with social responsibility and would not lead to negative impacts on any stakeholder group both directly and indirectly.

6. NEXT STEP

WHAUP believes that people are the most valuable asset and the driving force behind organizational growth and success. Therefore, human resources management is a top priority of our organization, we place a strong focus on developing and empowering employees to adapt and thrive amid constant changes in all aspects of the business. Consequently, we have set clear objectives for human resources management, aiming to recruit individuals with the skills, knowledge, and capabilities aligned with the organization's evolving needs particularly in an era of rapid technological advancement and business transformation. We also emphasize upskilling and reskilling initiatives to prepare employees for both current and future business developments. WHAUP with our goal in building effective recruitment, training, and development systems to attract and retain high-potential skilled workforce. Strategic initiatives are in place to enhance employee capabilities and support career advancement through training and development programs. The success of these efforts is measured by the Human Capital Return on Investment (HCROI), with a target of 16.3 by 2025. Additionally, we prioritize employee engagement through various initiatives, setting a target engagement rate of 76% in 2025 and a long-term goal of 80% by 2026. WHAUP will continue to implement and improve human resources strategies and programs to stay ahead of business changes and meet employee expectations. These efforts support WHA Group's aspiration to remain a Best Employer in Thailand and across the region.



OCCUPATIONAL HEALTH AND SAFETY

1. GLOBAL TREND

Currently, the direction of Occupational Health and Safety (OHS) management continues to evolve in response to the changing risk landscape of the industry. The adoption of technologies such as IoT and AI for real-time monitoring and control of safety risks has enabled more accurate data analysis, allowing for proactive risk forecasting and prevention planning. There is also a growing emphasis on proactive approaches to employee health and safety, including the implementation of training programs aligned with international standards, the promotion of a strong safety culture within organizations, and increased attention to mental well-being in the workplace.

Moreover, laws and standards related to occupational health and safety have been updated to accommodate new risks and changing work patterns. Examples include epidemic prevention measures in workplaces and adapting to new technologies focused on automation, such as using robots to transport hazardous materials to reduce risks to employees. Therefore, long-term strategic planning in occupational health and safety is essential to building sustainability and confidence in the business both nationally and internationally.

2. OUR POSITION

WHAUP recognizes the importance of occupational health and safety and is committed to the goal of zero accidents. The company has implemented environmental management practices centered on occupational health and safety principles, aligning with the evolving trends and challenges in the utilities and energy businesses. By integrating Internet of Things (IoT) technology and Artificial Intelligence (AI), WHAUP enhances its ability to monitor and manage safety risks in real time. This includes the installation of sensors to detect air quality, chemicals, and noise levels, as well as using data analytics to predict risks and proactively develop effective prevention plans. In addition, WHAUP provides appropriate personal protective equipment (PPE) for employees working in high-risk areas, installs chlorine detection systems, and ensures continuous monitoring and control. The company also arranges annual specialized health check-ups for employees in high-risk groups on a regular basis.

WHAUP is also committed to fostering a safety culture within the organization by organizing training programs aligned with international standards, promoting the reporting of risk situations, and providing counseling



services alongside employee wellness programs that go beyond typical health benefits. WHAUP facilitates convenient and rapid access to healthcare services through the WHAbit program, which enables employees to consult on occupational health issues and access specialist medical treatment via Telemedicine and digital medical support tools immediately in emergencies. Moreover, the concept of promoting employee well-being is integrated into the design of WHA Group's buildings, encouraging movement within the premises. This includes designing staircases to encourage walking between floors as an alternative to elevator use, enabling occupants to engage in physical activity while also saving energy. Additionally, WHAUP promotes various wellness activities, such as yoga classes, which contribute to both physical and mental health development.

In addition, WHAUP has incorporated epidemic prevention measures into workplace operations and adopted new technologies, such as robots for handling hazardous materials, to reduce risks to employees in operational areas. This commitment is reflected in the integration of safety into the Operational Excellence Framework by establishing policies on security, safety, occupational health, and environment (SSHE). WHAUP also employs leading and lagging performance indicators to continuously evaluate and improve operational processes in line with stakeholder expectations and evolving circumstances.

Through these developments, WHAUP has demonstrated its ability to respond effectively to emerging challenges and manage occupational health and safety efficiently, reinforcing sustainability and building confidence in the industrial estate business both nationally and internationally.

3. MANAGEMENT APPROACH

3.1 GOVERNANCE STRUCTURE OCCUPATIONAL HEALTH AND SAFETY MANAGEMENT STRUCTURE

WHAUP places great importance on comprehensive management of occupational health and safety by focusing on establishing clear governance frameworks, developing personnel skills, and investing in safety measures. These efforts aim to create a safe working environment and reduce risks of accidents or workplace hazards. WHAUP has established a dedicated working team occupational health and safety management, comprising personnel from all departments. The Chief Operating Officer plays a key role in managing safety projects and promoting safety standards at every stage of operations.

To ensure operational efficiency, WHAUP has assigned the Occupational Health and Safety Working Group to operate under the supervision of the Board of Directors. This committee plays a key role in setting strategic direction, including policy formulation, strategic planning, performance monitoring, and comprehensive assessment of the impacts of occupational health and safety policies. This structure ensures that operations align with defined goals and can effectively respond to emerging situations or changes.

The systematic and continuous implementation of safety measures not only helps minimize work-related risks and prevent accidents, but also promotes the overall well-being and welfare of employees at all levels. Moreover, it reinforces stakeholder confidence in WHAUP's genuine and ongoing commitment to ensuring the safety and health of its workforce.



Roles	Responsibilities
Chief Operating Officer	The Chief Operating Officer (COO) plays a key role in managing occupational health and safety projects across all departments, including overseeing the implementation of safety measures at every stage to ensure compliance with established standards. The COO is also responsible for reporting performance results and presenting recommendations to the Corporate Governance and Sustainability Committee at least once a year, to enable continuous monitoring and review of safety performance.
Board of Directors	The Board of Directors is responsible for setting the direction and overseeing operations at the policy level. Their duties include establishing the framework for occupational health and safety policies, strategic planning, monitoring performance, and comprehensively evaluating the impacts of policy implementation.

In addition, WHAUP holds quarterly meetings of the Safety, Occupational Health, and Working Environment Management Committee in collaboration with WHA Group. These meetings serve to review and provide recommendations for various improvements to ensure that risk management is conducted appropriately and effectively.

3.2 RISK AND OPPORTUNITIES MANAGEMENT STRATEGY

OCCUPATIONAL HEALTH AND SAFETY RISKS AND OPPORTUNITIES IN THE CONTEXT OF INDUSTRIAL ESTATES

Occupational Health and Safety (OHS) is a critical issue within the context of the utilities and energy business, as WHAUP operates within the industrial estates of WHA, which serve as hubs for a variety of industrial activities. Additionally, WHAUP utilizes water from multiple sources as a primary input in its operations, which, if not managed properly, could result in long-term impacts on communities and the environment.

WHAUP views this context as an opportunity to drive sustainable development through various means, such as applying safety technologies and innovations, enhancing operational standards to meet international levels, and building trust among stakeholders. These efforts contribute to making WHAUP's utilities and energy operations a safe environment that supports sustainable economic and social development in the long term.

To ensure the highest level of safety management efficiency, WHAUP has implemented risk management in accordance with the internationally recognized Occupational Health and Safety standard ISO 45001.

This standard provides a systematic approach to workplace risk management and helps minimize hazards effectively. WHAUP expects to receive official ISO 45001 certification by August 2025.

RISK ASSESSMENT AND RISK PREVENTION MEASURES

To focus on the prevention and control of risks that may lead to accidents or losses, WHAUP has planned and implemented a systematic occupational health and safety risk assessment process. This process aligns with the international standard ISO 45001 and covers all activities and areas where employees and contractors are involved. The hazards that may arise from various activities are carefully considered to establish appropriate and comprehensive prevention and control measures. The risk assessment process is an important step that helps ensure effective and comprehensive occupational health and safety management. It begins with classifying all operational activities, whether routine or non-routine, to identify activities with potential risks or hazards, including causes that may lead to dangers in the workplace. This starts with defining the scope of work to create a clear framework regarding duties and activities to be analyzed. Next is identifying risks and hazards, which helps discover risk factors that may affect the safety and health of workers and related parties. After that, the risk assessment step analyzes and reviews the severity and likelihood of those risks. The next step is prioritizing risks by focusing on managing risks with the highest impact first. Finally, risk management control measures are implemented to establish effective prevention or mitigation guidelines. This entire process is a continuous cycle to improve and maintain safety standards at every stage of operations.



WHAUP has conducted a risk and opportunity analysis as follows:

1. OCCUPATIONAL HEALTH AND SAFETY RISK

Based on the assessment of all operational activities conducted by WHAUP in 2024, activities identified as having occupational health and safety risks include:

OCCUPATIONAL HEALTH & SAFETY RISK AND HAZARD ASSESSMENT IN OPERATIONS

Occupational Health & Safety Risk	Affected stakeholders	Description	Mitigation/ Remediation Measure
Exposure to hazardous chemicals at the industrial water production plant	Employees	Chemicals such as chlorine and sodium hypochlorite are used in wastewater treatment processes. Therefore, employees who handle these chemicals are at risk of exposure in the workplace.	Provided appropriate personal protective equipment to employees who perform these tasks. Additionally, chlorine detection equipment should be installed, and regular monitoring and control measures should be implemented. Furthermore, employees at risk should undergo annual health check-ups.

OCCUPATIONAL HEALTH & SAFETY RISK AND HAZARD ASSESSMENT IN DEVELOPMENT PROJECTS

Occupational Health & Safety Risk	Affected stakeholders	Description	Mitigation/ Remediation Measure
Safety related to electric vehicle charging stations	Employees and suppliers	Due to the increasing use of electric vehicles, WHAUP has established electric vehicle charging stations, which may cause accidents during use, such as electrical short circuits.	WHAUP conducts inspections, monitoring, and maintenance of charging stations to comply with relevant safety standards and develops personnel to respond to emergencies.
Mental health and well-being (social factors)	Employees, suppliers/ customers, and tenants	The development of new projects with high expectations and tight schedules, driven by customer or tenant demands, requires workers to accelerate tasks, adjust project plans, and deliver on time, potentially impacting workers' mental health and well-being.	WHAUP has established project management rules and regulations to ensure safety. Since this risk arises from project acceleration, WHAUP considers appropriate recruitment, resource allocation, and welfare management for employees during project implementation, as well as project management to maximize stakeholder satisfaction.

Therefore, WHAUP has implemented measures to prevent and reduce occupational health and safety risks in the working environment according to the Hierarchy of Controls principle. This includes preparing operational manuals, hazard warning signs, and providing adequate personal protective equipment. Furthermore, training sessions are conducted for worker, tenant, and related personnel to ensure they comply with safety policies and measures. Incident investigations are conducted whenever any hazard occurs, and measures are established to prevent recurrence. Additionally, safety officers conduct daily operational inspections to ensure safe and proper practices, with the results reported in Safety Committee meetings.

WHAUP views effective occupational health and safety management as an opportunity for the organization in several aspects. This includes enhancing confidence in the industrial estate area, where stringent safety measures increase trust from investors, partners, and surrounding communities. Additionally, a safe working environment helps improve employee satisfaction and engagement with the organization, which positively impacts the retention of quality personnel in the long term. Furthermore, it fosters positive relationships with the community by prioritizing safety and the environment, which serves as a crucial foundation for sustainable cooperation in the future.

3.3 RISK MANAGEMENT

In setting occupational health and safety policies, WHAUP places great importance on strict compliance with the Occupational Safety, Health, and Environment Act B.E. 2554 (2011) and all related laws. WHAUP develops occupational health and safety management systems and measures that comply with legal requirements. A Quality, Safety, Occupational Health, and Environmental Policy has been established, covering all employees, as well as suppliers, contractors, visitors, and all stakeholders under WHAUP's responsibility. Occupational health and safety criteria are stipulated as purchasing conditions and are incorporated as part of contractual agreements.

Given the nature of WHAUP's utilities and power business, which involves a wide range of stakeholders including employees, contractors, business partners,

and surrounding communities, prioritizing occupational health and workplace environment is essential. This focus helps prevent potential impacts on the health, lives, and property of all involved parties. It also encompasses the protection of related human rights, such as the right to access healthcare services and the right to live in a safe and high-quality environment.

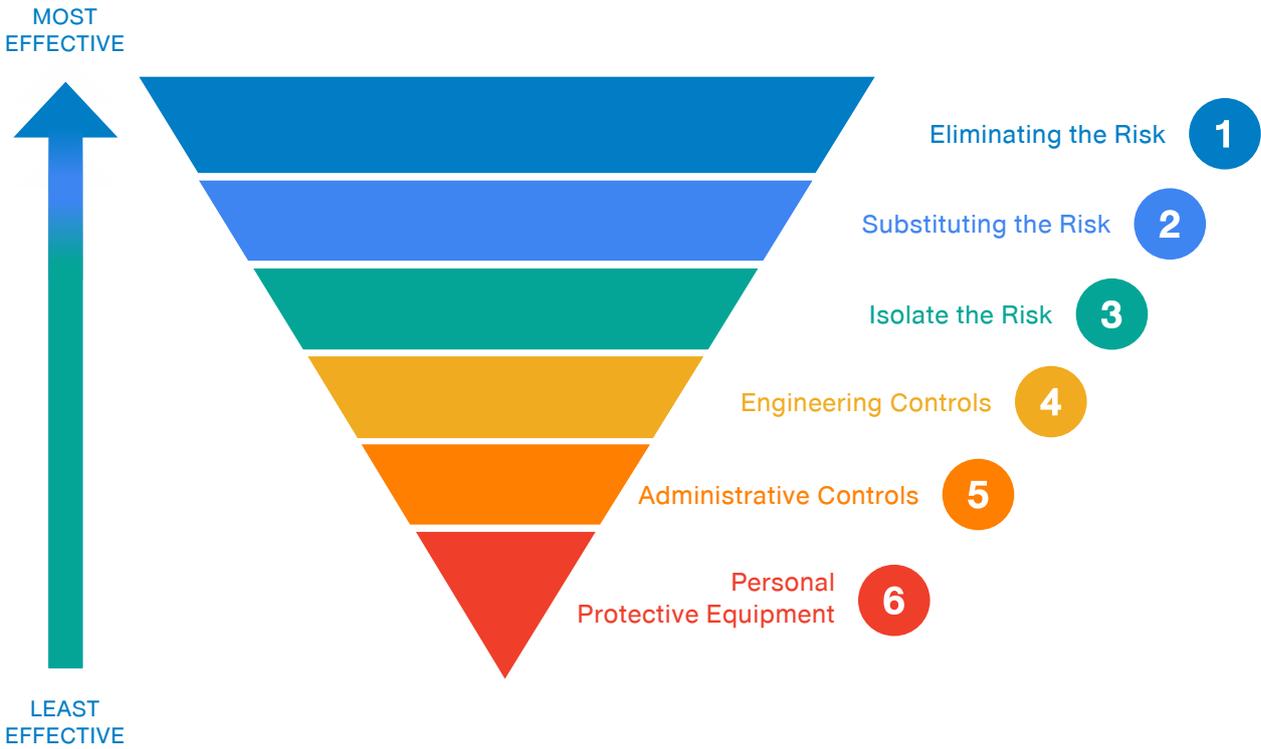
WHAUP has implemented proactive measures to ensure the safety and well-being of all stakeholders. These include an effective occupational health and safety management system, the establishment of preventive measures tailored to the nature of work in the energy and utilities sectors, the promotion of a strong safety culture within the organization, and the continuous enhancement of employee well-being. These efforts aim to boost morale and build confidence among those working with WHAUP, while ensuring that operations are carried out safely, efficiently, and sustainably in the long term.

To control and manage risks that may arise from operational activities to meet WHAUP's goal of reducing the number of accidents, injuries, and work-related illnesses, WHAUP has applied the principles of the Hierarchy of Controls in our operations. This involves implementing risk control measures from basic safety controls to advanced safety controls that can eliminate risks, as follows:

1. Elimination: Removing the risk entirely or not introducing the risk into the work area. WHAUP uses the results of risk assessments to determine controls that correspond to the assessed level of risk.
2. Substitution: Replacing hazardous materials or processes with less hazardous ones.
3. Isolation: Separating or minimizing workers' exposure to risks as much as possible. For example, using barriers to separate workers from hazards, such as leveraging remote technology to control machinery so that personnel do not need to be close to the risk. This also includes handling hazardous chemicals by correctly segregating compatible hazardous chemicals or storing chemicals away from activities that may cause danger, such as flammable materials that could ignite or cause fires.

4. Engineering Controls: Designing or modifying machinery and equipment to reduce hazards at the source. This includes isolating hazards from workers, installing emergency stop buttons, and implementing Lockout/Tagout procedures to disconnect energy sources before maintenance to prevent hazards from residual energy in equipment or machinery, such as electrical, mechanical, pneumatic, gas, or hydraulic energy.

5. Administration: Managing work safety through administrative measures such as setting qualifications for workers and providing training.
 6. Personal Protective Equipment (PPE): Providing workers with PPE to protect any part of the body from risks associated with their work or the working environment.



Internal risk assessments are conducted annually or when there are changes in operational processes, as well as relevant rules, regulations, and safety standards, e.g., NFPA, OSHA, NIOSH. This ensures that all risk and hazard assessments are systematic and compliant with standards, and that the established control measures are comprehensive and appropriate. The results of the assessments and reviews are compared with set targets, such as Safety KPIs, and the reduction of accident and illness rates, to evaluate the effectiveness of the measures. These results are used to improve WHAUP’s occupational health and safety management system and related measures, making them more effective and encompassing all events and risks. The information is communicated to stakeholders through the annual sustainability report.

WHAUP aims to prevent and reduce the occurrence of accidents, injuries, and occupational illnesses to the greatest extent possible by lowering the Total Recordable Injury Frequency Rate (TRIFR) per million working hours in 2024, as shown in the table.

NO	TRIFR	Man Hours Per Year	Target TRIFR Group	Target TRIFR LG	Target TRIFR ID	Target TRIFR UP	Actual TRIFR LG	Actual TRIFR ID	Actual TRIFR UP	Actual TRIFR Group
			Target Accumu. Man hr. Group	Target Accumu. Man hr. LG	Target Accumu. Man hr. ID	Target Accumu. Man hr. UP	Actual Accumu. Man hr. LG	Actual Accumu. Man hr. ID	Actual Accumu. Man hr. UP	Actual Accumu. Man hr. Group
	TRIFR 2022		≤0.75		Didn't set a goal		0.21	1.08	0.88	0.58
1	- The best Man hours Record 1 Jan 22-31 July 22 : 5,844,365 - Man hours without lost time accident 1 Aug 22 - 31 Dec 22 : <u>4,499,287</u>	10,343,652	>15,000,000		Didn't set a goal		1.76 M.	1.77 M.	1.14 M.	4.4 M.
	TRIFR 2023		≤0.5		Didn't set a goal		0.28	0.54	1.43	0.48
2	- The best Man hours Record 1 Aug 22-29 July 23 : 9,422,665 1 Aug 23-16 Oct 23 : 2,392,665 - Man hours without lost time accident 17 Oct 23-31 Dec 23 : <u>2,108,076</u>	10,501,501	>10,000,000		Didn't set a goal		0.66 M.	0.59 M.	1.39 M.	2.1 M.
	TRIFR 2024		≤0.3	0.60	0.45	1.8	0.21	0.56	2.05	0.43
3	- The best Man hours Record 17 Oct 23 - 30 Nov 24 : 12,740,715 - Man hours without lost time accident 2 Dec 24 - 31 Dec 24 : <u>891,492</u>	11,572,932	>10,000,000	4 M.	5 M.	6 M.	5.31 M.	0.30 M.	4.33 M.	0.89 M.

In 2022
TRIFR was = **0.58**

In 2023
TRIFR dropped to **0.48**
down 17% from 2022

In 2024
TRIFR dropped to **0.43**
down 11% from 2023

Risk assessment and risk prevention measures are clearly divided into two parts: existing projects and projects likely to arise. This process includes reviewing and assessing potential risks in each project across economic, social, and environmental aspects, as well as evaluating possible impacts from operations. This ensures that these projects align with sustainable development guidelines and effectively reduce potential risks. WHAUP uses analysis and various prevention measures to create stable and sustainable operations, whether for existing projects or new projects under development.

ESTABLISHMENT OF THE OCCUPATIONAL HEALTH, SAFETY AND ENVIRONMENT DEPARTMENT

WHAUP has established mechanisms for managing occupational health and safety that promote participation and feedback from personnel at all levels. This is achieved through the formation of a Safety Committee, which includes executives and

employees from all business units, as well as the Human Resources department. The committee is responsible for managing safety by gathering feedback, providing advice, and regularly reviewing occupational health and safety-related risks. Decision-making authority within the committee is shared among all members, from operational staff to executives, and the results of committee meetings are reported to the Chief Executive Officer every quarter.

Additionally, WHAUP has established a Safety Department under the supervision of the Chief Operating Officer to oversee safety-related matters and to achieve the goal of zero accidents, enhancing workplace safety throughout the organization. WHAUP has also appointed certified occupational health and safety professionals and has emergency response vehicles on standby to prevent and mitigate hazards in all areas. Furthermore, the Human Resources department is tasked with supporting the provision of appropriate and sufficient Personal Protective Equipment (PPE) for employees.



ENHANCING OCCUPATIONAL HEALTH AND SAFETY

WHAUP continues to enhance its occupational health and safety management systems and processes by adopting the ‘SMART Safety’ approach developed by WHA Group. This approach focuses on 3 key areas: (1) emergency response, (2) road safety, and (3) asset protection. It is designed to strengthen the organization’s safety culture while improving monitoring and management across all operational areas, including both WHAUP’s project sites and surrounding areas. The ‘SMART Safety’ concept also emphasizes the integration of various initiatives and measures to establish a robust management system tailored to address specific risks in each context. Examples include the development of

modern emergency response plans, the promotion of road accident prevention measures, and the implementation of systematic efforts to reduce the risk of asset loss. All of these initiatives contribute to ensuring safety and security for employees, contractors, and neighboring communities in and around WHAUP’s areas of operation.

In 2024, WHAUP’s occupational health and safety enhancement projects aligned with the ‘Smart Safety’ concept were comprehensively developed, focusing on effectiveness in all dimensions. The initiatives were carried out with in-depth attention to each area to promote safety both at workplaces and surrounding areas. Key projects include:

PREPARATION FOR EMERGENCY RESPONSE AND THE REPORTING OF ACCIDENTS AND INCIDENTS

WHAUP has established a comprehensive plan to address emergencies, including fire incidents and chemical spills. This plan covers actions to be taken before, during, and after an incident, as follows:

Before Incident	During Incident	After Incident
Install an efficient and reliable alarm system and prepare protective and initial emergency response equipment in high-risk areas. Regular inspections and maintenance are conducted to ensure all equipment is always ready for use. Personnel are trained to increase knowledge and understanding of disaster prevention and proper actions during incidents.	WHAUP has established comprehensive procedures covering all steps, including initial emergency response, notifying relevant agencies, clear communication plans to inform employees and stakeholders, and evacuation plans to ensure safety. Regular emergency drills are conducted to ensure personnel are well-prepared to handle real incidents effectively.	Conduct thorough site inspections and damage assessments. Investigate the root causes of the incident to improve future prevention measures. Develop plans to mitigate impacts on personnel, assets, and the environment. These steps aim to restore the environment and rebuild long-term trust with stakeholders.

All employees and contractors working within WHAUP's premises are required to undergo training and drills to prepare for emergency responses. This ensures they understand the situations and their roles and responsibilities and can evacuate themselves quickly and safely.

In the event of an emergency, employees are required to follow the procedures and measures they have been trained on and to evacuate themselves from the situation as quickly as possible. After the emergency, employees must report the incident truthfully to the Safety Committee, which will investigate the root cause of the accident and establish preventive measures to avoid recurrence.

Additionally, WHAUP provides channels for employees to report unsafe incidents or working conditions that could endanger life, health, or property. Reports can be made through incident report forms, complaint forms, or directly to supervisors. Whistleblowers are protected, and their information will not be disclosed to unrelated parties, in accordance with WHAUP's whistleblower protection policy. Moreover, employees have the right to assess risks and refuse to work if they identify unsafe conditions until those hazards are resolved. Safety officers are assigned to investigate such cases to determine corrective actions and preventive measures to eliminate the risks.

HAZARDOUS CHEMICAL SAFETY MANAGEMENT

From the occupational health and safety risk assessment of WHAUP's operational activities, exposure to hazardous chemicals at the industrial water production plant has been identified as a significant risk. WHAUP has recognized that employees at the industrial water production plant may be exposed to chlorine and sodium hydroxide. To manage these risks, the following mitigation measures have been implemented:

- Ensuring that all employees have access to suitable PPE.
- Installation and Regular Inspection of Chlorine Gas Detectors: To promptly detect any chlorine leaks

OCCUPATIONAL HEALTH AND SAFETY MANAGEMENT IN CONSTRUCTION WORK

Construction-related accidents are considered a major safety risk, posing potential harm or fatality to contractors or WHAUP and WHA Group employees during construction activities. These include incidents such as falls from heights, injuries from sharp objects, burns, and others. To address these risks, WHAUP has developed and implemented the following preventive measures:

- Developed a contractor handbook in which contractors are required to follow safety standards
- Performed a job safety analysis and developed safety procedures.
- Implemented a work permit system
- Conducted inspections to ensure orderliness at construction sites for water treatment plants and solar system installations across various locations

HEALTH AND SAFETY OF EMPLOYEES IN VARIOUS PANDEMIC SITUATIONS

Although the COVID-19 pandemic has passed, WHAUP continues to maintain strict preventive measures to safeguard the health and safety of employees and all relevant stakeholders. WHAUP remains prepared to respond to any future outbreaks by implementing procedures aligned with the Ministry of Public Health's regulations and requirements. Communication and dissemination of the latest updates on infectious diseases are regularly conducted through training sessions held both in-person and online via the organization's SharePoint platform, as well as through emails sent to all employees. In addition, WHAUP enforces disease prevention and control measures in designated areas (Bubble and Seal), in line with government objectives to protect factory workers and surrounding communities from infectious diseases. Furthermore, WHAUP has developed a long-term Business Continuity Plan (BCP) for disease control, ensuring preparedness to effectively respond to emergencies and crises. This plan supports the seamless continuation of all business operations throughout the organization.

COMMUNICATING SAFETY CULTURE TO EMPLOYEES AND BUSINESS RELATIONSHIPS

WHAUP emphasizes implementing safety values among all stakeholders, both internal and external, by effectively communicating the organization's safety culture to employees, contractors, customers, visitors, and surrounding communities. This aims to foster a strong understanding and awareness of occupational health and safety practices. The communication efforts include various methods, such as Conducting annual supplier evaluations (Supplier Day and Safety Club events), Raising awareness through the Operational Excellence Framework, and Providing targeted training specific to employee groups based on their exposure to different risks, such as emergency management and handling chemical spills. The training programs are designed to be comprehensible and practical, addressing all potential risks from operational activities. The trainers are experts in occupational health and safety, and they conduct evaluations after each training session. Additionally, all training programs are reviewed and assessed annually to ensure they remain current and highly effective. Feedback from participating employees is also incorporated to continuously improve and develop the training content.



WHAUP places great importance on promoting the well-being of its employees by providing various benefits such as health insurance, accident insurance, and annual health check-ups, which align with the risk characteristics of the utility and energy business. Additionally, WHAUP supports recreational activities to enhance employee happiness by continuously backing the operation of employee clubs, including takraw, fitness, boxing, yoga, and badminton clubs, among others, to promote employees' health and well-being. WHAUP also encourages employees to provide suggestions for improving the working environment through their supervisors, representatives from the Human Resources department, the Safety department, and occupational health and safety experts. Furthermore, channels are available for employees and business partners to receive initial consultations and offer feedback on occupational health and safety through various communication methods such as email, LINE, direct discussions with supervisors, or conversations with responsible safety officers. Moreover, WHAUP uses an application for customer communication called WHASApp or WHA Super Application. Upon receiving complaints, the company brings them to the Safety, Occupational Health, and Work Environment Committee (SH&E Committee) meetings to discuss and address the complaints in subsequent steps.

In addition, WHAUP places importance on the safety of contractors working on site by specifying occupational health and safety requirements in contracts. Contractors working on site are required to strictly comply with WHAUP's safety requirements. Before starting work, WHAUP provides training for contractors covering 3 areas: environmental policies; related rules and regulations such as Contractor Management Work Procedure, Safety Inspection Work Procedure, Crane Operation Work Procedure (WHA-SSHE-P-014), Forklift Operation Work Procedure, Scaffolding Operation Work Procedure, Construction Safety Management Work Procedure, Working at Heights Work Procedure, Lockout-Tagout Work Procedure (WHA-SSHE-P-024), Electrical Work Procedure, and safety standards. Contractors must complete the training to receive a contractor ID card and be allowed to start work on site. All contractors who wish to do business with WHAUP must meet the occupational health and safety criteria set by WHAUP.

DISCLOSURE OF PAST ACCIDENTS, CAUSES, AND CORRECTIVE ACTIONS

Although no work-related accidents causing injury or death were found in 2024, WHAUP continues to place importance on the management of occupational health and safety. Clear and systematic measures have been established for investigating and concluding cases that may result in accidents or incidents affecting employees' health and safety. This process covers data collection, cause analysis, transparent investigation reporting, and presentation to management for appropriate action consideration.

Moreover, WHAUP has implemented corrective actions and continuously improved preventive measures, including reviewing operational guidelines in various areas to reduce risks that could lead to future incidents and to ensure that all employees can work in the

safest environment possible. WHAUP also emphasizes communication and promotes employee participation at all levels to jointly prevent accidents, reaffirming our commitment to maintaining safety and health standards for employees and stakeholders in all aspects of operations.

If an accident occurs in the future, WHAUP will fully report the information. WHAUP has developed an Incident Management Report Application covering cause analysis, investigation summary, and corrective actions implemented, allowing for inspection and study of accident data. Emphasis is placed on transparency, understanding, and improvement of related measures, along with continuous reporting of operational and audit results to ensure the effectiveness of the measures and prevent recurrence of similar incidents in the future.



3.4 METRICS AND TARGETS

WHAUP has set short-term and long-term goals for occupational health and safety operations based on the implementation of the aforementioned management system. WHAUP’s occupational health performance in 2024 successfully prevented accidents and illnesses in accordance with the established targets as follows:

ACCIDENTS INVOLVING EMPLOYEES AND CONTRACTORS

Topic	Performance 2023	Performance 2024	Target 2024
Work-related accidents (construction and chemicals)	1.43 cases per million working hours	2.05 cases per million working hours	1.8 cases per million working hours
Accidents related to hazardous chemicals	1.43 cases per million working hours	2.05 cases per million working hours	1.8 cases per million working hours

ACCIDENTS INVOLVING EMPLOYEES AND CONTRACTORS

	Performance 2024	Target 2024	5 Year Long-Term Target
Fatal accidents involving both employees and suppliers	0	0	0
Work-stopping accidents involving employees and supplies	0	3	0
TRIFR	2.05	1.80	0

PERFORMANCE IN REDUCING OR PREVENTING THE RISK OF ACCIDENTS OR ILLNESSES FROM WORK

Risk of fire incident at the industrial water production plant and solar cell



2024 Target	0	2024 Performance	0
2024 Annual Target	0		

Risk of accidents in contractor lost time accident



2024 Target	1	2024 Performance	0
2024 Annual Target	0		

4. HIGHLIGHT PROJECTS

To meet the goal of preventing and minimizing the number of accidents, injuries, and occupational illnesses as much as possible in 2024, WHAUP has expanded proactive measures in occupational health and safety management. The focus is on risk reduction and continuously raising awareness among employees and stakeholders. The key activities in 2024 are as follows:

FIRE AND EVACUATION PERFORMANCE

WHAUP recognizes the importance of enhancing the capabilities of all stakeholders in responding to emergency situations. Therefore, the company has collaborated with WHA Group to organize emergency drills four times a year. These drills include advanced fire suppression training and performance evaluations of the drills, which assess employee readiness for the entire process, including Personal Protective Equipment (PPE), response actions, reporting procedures, and response time. WHAUP received full marks for its emergency drills in 2024.



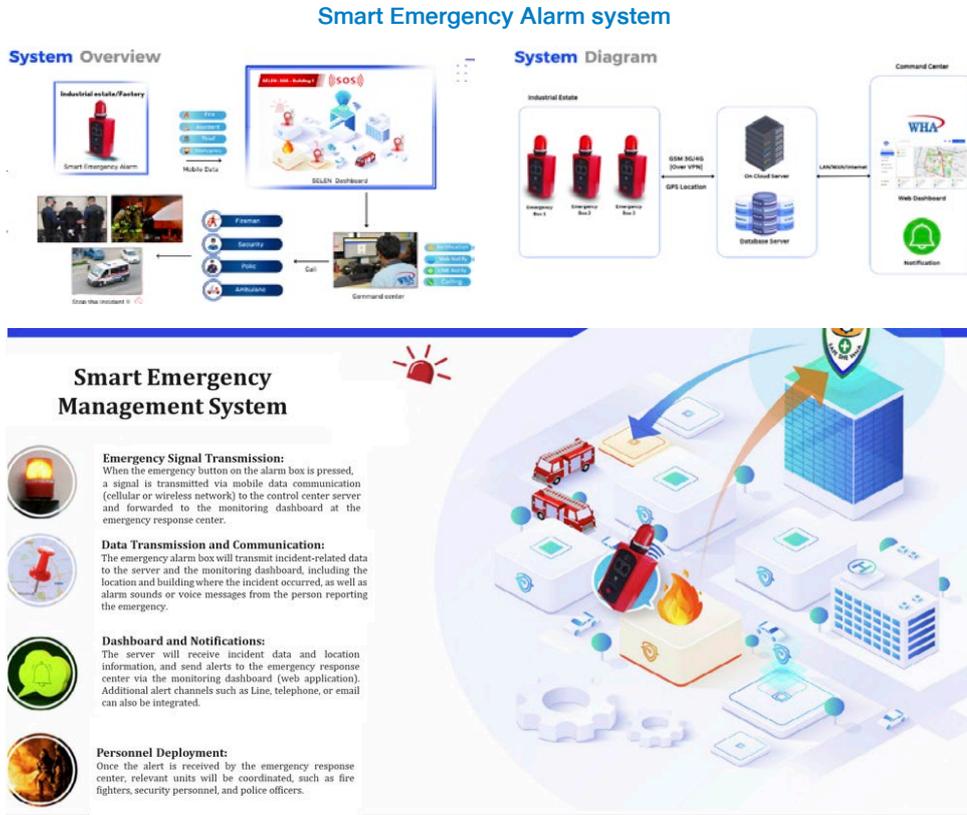
EMERGENCY RESPONSE DRILL FOR CHEMICAL SPILL INCIDENTS TO ENHANCE SAFETY IN INDUSTRIAL ESTATES

In the past year, WHAUP participated in an emergency response drill for chemical spill incidents. The drill involved participants from the Industrial Estate Authority of Thailand (IEAT), the Department of Disaster Prevention and Mitigation (DDPM), the Department of Labour Protection and Welfare (DLPW), local authorities, local communities, local hospitals, customers, WHAUP employees, and others. The drill covered key response mechanisms such as emergency reporting, first aid, PPE selection, command, and control. This exercise was conducted at WHA Eastern Seaboard Industrial Estate 1 (WHA ESIE 1) on July 10, 2024.



SMART EMERGENCY ALARM BOX

WHAUP has adopted a new emergency notification system by integrating IoT and AI technologies into industrial estates of WHA. This aims to enhance the efficiency, convenience, speed, accuracy, and safety of emergency notifications. The system has already been tested and installed for trial use by operators within the industrial estates, and it has received positive feedback from these operators.



EMPLOYEE SAFETY CULTURE ENHANCEMENT PROGRAM

WHAUP places great importance on cultivating a safety culture within the organization. To this end, WHAUP has joined the training programs for employees in accordance with regulations to instill a solid understanding and awareness of occupational health and safety practices. These efforts include conducting drills for both office-based and field employees. In 2024, a total of 419 employees participated in safety procedure training from all businesses of WHA Group, while 391 employees attended basic fire-fighting training. In addition, WHAUP continues to promote access to medical services for employees through various health benefits such as health insurance, accident insurance, and annual health check-ups. Employees are also encouraged to submit suggestions for improving the work environment to their supervisors, the Human Resources Department, the Safety Department, or occupational health and safety specialists.



CONTRACTOR SAFETY CULTURE ENHANCEMENT PROGRAM

WHAUP requires that contractors complete training in three key areas before commencing work: environmental policies, relevant regulations, and safety standards. Contractors who complete the training will receive a contractor ID card, which is valid for one year from the date of issuance. In 2024, WHAUP, in collaboration with WHA Group, organized training for 705 new contractors of WHAUP. In addition, WHAUP mandates that short-term contractors must also undergo training to obtain a one-time work permit valid for a specified period.



ESTABLISHMENT OF SAFETY CLUB

WHAUP, together with WHA Group, has also established a Safety Club to engage stakeholders in jointly enhancing safety measures. The Club comprises employees, contractors, and customers of WHAID and WHAUP. The objective of the Safety Club is to provide a platform for members to share opinions and perspectives on safety practices. In 2024, 3 meetings were held: the first meeting was held on 29 March 2024 with 116 participants from 90 companies; the second meeting was held on 18 July 2024 with 129 participants from 100 companies; and the third meeting was held on 27 September 2024 with 99 participants from 80 companies. These meetings covered various safety-related topics, including community and environmental issues, as well as coordination of relevant information for Club members.



BUILDING SOCIAL IMPACT INITIATIVE (BSI)



Since 2023, WHAUP and WHA Group partnered with the Foundation for Child Development Network and signed a Memorandum of Understanding to support the Building Social Impact Initiative (BSI). This initiative aims to create safe environments and improve access to healthcare, education, and protection services for children and families residing in construction camps. From 2023 to the present, WHAUP and the Foundation for Child Development Network have conducted surveys and implemented improvements across four key areas in worker camps: infrastructure, welfare and services, health, and education. These efforts are used to inform planning and drive collaborative development that promotes safety, well-being, access to quality education, and better living conditions for laborers and their families.

Moreover, the adoption of the BSI framework aligns with WHA Group's sustainability development strategy and social responsibility practices. It also reflects the core values of WHA Group in 3 main areas: W – Wellbeing: Promoting the sustainable well-being of all lives and the environment, H – Human Progress: Supporting human development across all sectors of society, A – Accessibility: Creating opportunities for access to essential needs and a better quality of life.

USE OF DRONES FOR INSPECTING ABNORMALITIES IN SOLAR PANELS ON ROOFS

WHAUP has implemented drone technology to inspect abnormalities in solar panels on roofs to reduce the risk of accidents from working at heights and to increase inspection efficiency. Previously, the inspection process required personnel to climb onto the roof to check the condition of the solar panels, which had safety limitations and was quite time-consuming.

The use of drones allows for quick and accurate detection of abnormalities, such as damaged panels, through high-resolution photography and thermoscan imaging to analyze solar panel abnormalities. This reduces the number of personnel and time required to perform direct inspections and lowers the chance of accidents during operations, enabling timely identification and resolution of detected issues. In 2024, WHAUP was able to reduce accidents related to solar panel repairs on roofs, including the use of technology to assist operations through the WHA Platform system to control and monitor the solar panel systems installed for customers.

5. IMPACTS ON STAKEHOLDERS AND ENVIRONMENT

WHAUP places great importance on Occupational Health and Safety (OHS) as a key part of sustainable business operations by implementing effective OHS measures to ensure the well-being of employees, contractors, and stakeholders, while also reducing environmental impacts from WHAUP's activities.

ENVIRONMENTAL IMPACT

WHAUP's OHS measures help reduce environmental risks related to industrial operations, such as hazardous materials management and monitoring air and water quality to comply with environmental standards. These efforts help minimize potential damage to ecosystems and reduce environmental impacts from accidents, including road accidents and construction activities.

STAKEHOLDER IMPACT

WHAUP's OHS operations promote a safe and healthy environment with the following main impacts:

- **Employees and Contractors:** WHAUP emphasizes safety training, hazard prevention, and regular workplace inspections to foster a zero-accident culture. This not only protects employees but also boosts morale and increases work efficiency.
- **Customers:** Strict adherence to safety standards ensures reliable services and products, thereby building customer trust and satisfaction.
- **Communities:** By reducing risks from industrial accidents or pollution, WHAUP's OHS measures protect community members from potential harm. Community engagement programs further promote understanding and cooperation on health and safety matters.

Through effective management of OHS risks and opportunities, WHAUP enhances operational resilience, protects the environment, and strengthens positive relationships with stakeholders. This commitment aligns with WHAUP's long-term goals to promote sustainable growth while ensuring the health and safety of all parties involved.



6. NEXT STEP

Occupational health and a safe working environment have always been key priorities for WHAUP in its business operations. Looking ahead, WHAUP remains committed to developing a robust occupational health and safety management system to achieve the goal of zero work-related accidents. Although WHAUP successfully met its accident reduction target in 2024, it continues to set ambitious long-term goals, including reducing contractor fatalities to zero and cutting the number of contractor incidents resulting in work stoppages or lost work hours by 50 percent by 2025. Additionally, WHAUP aims to reduce its Total Recordable Injury Frequency Rate (TRIFR) to below 1.80 by 2025.

To achieve these goals, WHAUP focuses on thoroughly reviewing risk assessment results from operational activities and analyzing past incident investigations to enhance the effectiveness of existing safety measures. WHAUP also plans to implement an online system for incident reporting and work permit approvals, alongside the development of an Emergency Alarm System and the integration of Artificial Intelligence (AI) to process and analyze safety data for continuous improvement.

Furthermore, WHAUP intends to adopt a real-time environmental monitoring system using Internet of Things (IoT) sensors to detect potential hazards, such as temperature, humidity, and noise levels, enabling immediate alerts to workers and safety personnel. WHAUP also plans to enhance safety training through the use of Virtual Reality (VR) and Augmented Reality (AR) technologies, creating realistic and effective training experiences. These training programs aim to raise awareness among employees and contractors about potential hazards and appropriate prevention methods in real-world scenarios.



COMMUNITY DEVELOPMENT AND STAKEHOLDER ENGAGEMENT

1. GLOBAL TREND

Communities are highly significant stakeholders for various organizations as they are directly impacted by business activities, both positively and negatively in environmental, economic, or social aspects. Consequently, the relationship between businesses and communities is therefore a crucial factor influencing the sustainability of both parties. While businesses rely on labor, resources, and land from communities, communities in turn expect the business sector to demonstrate accountability and actively participate in enhancing the quality of life. Therefore, balanced community development is an approach that organizations worldwide prioritize, focusing on business growth alongside promoting the long-term well-being of communities.

Currently, community development approaches emphasize participatory development, focusing on listening to the opinions of the community and all stakeholder groups. This is a key factor in building trust and fostering collaboration among all parties. In addition, the adoption of digital technology and innovation enhances the efficiency of communication and operations, making the participatory process more transparent and inclusive.

Another key trend in community development is the integration of the circular economy and sustainable development concepts. Businesses can collaborate with communities in managing resources to maximize their benefits, reduce environmental impacts, and promote community self-reliance. This also helps strengthen resilience in responding to economic, social, and environmental changes.

2. OUR POSITION

WHA Group recognizes the importance of advancing the national economy alongside local community economies. Therefore, we place great emphasis on fostering strong relationships with communities to promote mutual benefits between the community and business operations, as well as to minimize the potential conflicts between the organization and local communities residing around WHAUP's operational areas. Accordingly, WHAUP has developed business plans that comprehensively consider both direct and indirect impacts on communities, including environmental pollution such as noise, air, wastewater, and waste, as well as social issues such as the increase in transient populations and the risk



of accidents in industrial zones, which are the areas of operation. WHA Group also plans operations to avoid causing any possible potentially negative impacts on communities as it could not cause hardship for community members and a loss of trust, resulting in significant financial losses and delays in investment.

To promote a balance between economic, social, and environmental dimensions, WHAUP has adopted the Bio-Circular-Green Economy (BCG Model) in adaptation with the United Nations Sustainable Development Goals (SDGs), aligning them with WHAUP’s sustainable social initiatives. WHAUP also supports community development to grow together with our business with a focus on creating mutual benefits through various projects, such as education sponsor to enhance the potential of local workforce which could improve the quality of life in communities and support the development of skilled labor for the future.

For the environmental dimension, WHAUP is committed to Net Zero CO2 Emissions by 2050 while we area already have achieved carbon neutrality since 2021. We continue our long-term social and environmental initiatives to promote natural resource conservation, clean renewable energy development, and reduce CO2 emissions. “WHA Clean Water for Planet” project is a

great example where we aim to develop the quality of backup water supplies for communities, and the expansion of tree-planting areas in collaboration with local communities to increase oxygen levels in the atmosphere and reduce carbon dioxide.

In addition, WHAUP also places importance on the well-being of employees and surrounding communities, while conducting business ethically and responsibly for the benefit of all stakeholders. We also implement risk prevention measures that may affect the fundamental rights of communities and all stakeholder groups such as the right to a safe life. WHAUP operate according to WHA Group’s commitment, “The Ultimate Solution for Sustainable Growth,” which emphasizes balanced growth among the organization, society, and the environment, without leaving any stakeholders behind. We also support community development projects in line with WHA Group’s mission, “WHA : WE SHAPE THE FUTURE,” to create jobs, generate income, and enhance the quality of life for people in society, thereby contributing to the sustainable growth of the Thai economy. With our 16 years of success reflecting our ability to seamlessly integrate business with communities, earning continued trust and support from local communities which is an essential foundation for sustainable business operations in the future.



3. MANAGEMENT APPROACH

3.1 GOVERNANCE STRUCTURE

WHAUP operates in alignment with the Corporate Social Responsibility (CSR) policy framework, which has been approved by WHA Group’s Board of Directors and in line with WHA Group’s CSR policy. This framework emphasizes the sustainable coexistence of business operations with communities and the environment. To this end, we have assigned the Corporate Social Responsibility (CSR) Committee to act as the main working function for community development. The Committee comprises representatives from relevant departments within WHAUP and various business units under WHA Group such as Human Resources, Marketing, and Sustainability department, to ensure a comprehensive understanding of and responsiveness to community needs. The committee works closely with various departments to create policies that focus on long-term sustainability and driving initiatives that generate tangible economic and social benefits. The Committee’s key roles and responsibilities are as follows:

ROLES AND RESPONSIBILITIES OF THE CORPORATE SOCIAL RESPONSIBILITY AND ENVIRONMENTAL COMMITTEE

Define strategies and goals	The committee is responsible for formulating policies and strategies for community development and fostering good relations between the organization and the community. The focus is on sustainable development in all dimensions, such as creating economic opportunities, promoting education, and improving the quality of life for the people.
Promote community participation	The committee emphasizes the importance of community involvement in collaboration and decision-making for various projects by organizing regular meetings, needs assessments, and exchanges of opinions. This approach ensures that the projects genuinely address the community’s needs.
Monitor performance and evaluate impacts	The committee monitors and evaluates the implementation of community-related projects to ensure that they deliver maximum benefits to the community. In addition, the committee reports the project outcomes to the Board of Directors at least once a year.

The Corporate Social Responsibility and Environmental Committee is responsible for overseeing WHAUP’s social initiatives. The committee operates under the Chief Operating Officer (COO), who is leading and planning the implementation of these initiatives in collaboration with WHA Group to ensure that community and social development efforts align with the established goals.

3.2 RISK AND OPPORTUNITIES MANAGEMENT STRATEGY

Due to the nature of utilities and power business, there are both risks and opportunities associated with community development in our areas of operation. WHAUP has implemented a stakeholder engagement program across all our operational sites. As part of this approach, we actively participate in tripartite meetings involving representatives from WHAUP, WHA Group, Industrial Estate Authority of Thailand (IEAT), community representatives, and local authorities. These meetings are held regularly to engage and listen to the concerns and feedback of the local

communities and stakeholders. In addition, we also conduct annual community perception surveys to assess local views on our community development initiatives. WHAUP also collaborate with WHA Group to develop the “WHASApp” mobile application, which enables residents in our operational areas to receive updates, report incidents, or communicate directly with us. These measures ensure that WHAUP manage community relations consistently and fairly, especially for communities potentially affected by its activities while enabling WHAUP to assess risks and opportunities in Environmental, Social, and Governance (ESG) aspects effectively, as outlined below:

Risks	Opportunities
<p>If WHAUP is unable to implement community development initiatives effectively, it could negatively impact our long-term relationship with surrounding communities and stakeholders. A lack of effective communication and engagement may lead to misunderstandings and dissatisfaction among community members as we fail to meet their expectations. This could result in tensions or conflicts between WHAUP and the communities. Moreover, if WHAUP's projects significantly affect community livelihoods such as through relocation, reduced income, or cultural disruption or cause environmental impacts, such as industrial expansion into ecologically sensitive areas, it could lead to ecosystem degradation and further compromise the quality of life for local residents.</p>	<p>Effective community development efforts can create significant opportunities for both WHAUP and local communities. It would improve trust among other stakeholder groups in our business operations. A community development approach that emphasizes collaboration and participation strengthens relationship between business and the community would foster a sense of belonging and increasing community support for our activities while minimizing potential conflicts. Furthermore, if WHAUP can promote sustainable growth within communities by enhancing quality of life and generating local income, this would contribute to positive economic and social impacts on a broader scale.</p>

Assessing both the risks and opportunities related to community development will enable WHAUP to strategize community development that are effective and sustainable. It will also foster efficient collaboration with the community and other stakeholders to maximize benefits in environmental, social, and governance aspects.

3.3 RISK MANAGEMENT

WHAUP prioritize managing risk related to potential impacts on communities and the environment by proactively implementing Corporate Social Responsibility (CSR) projects and activities. These efforts aim to ensure that all communities in the operational areas grow sustainably alongside the organization. Our risk management approach is not limited to compliance with relevant laws and standards but also emphasizes collaboration with communities to ensure smooth and sustainable operations. Therefore, we prioritize the prevention and timely management of potential negative impacts arising from its operations, in order to maintain a balance between business growth and community well-being.

At WHAUP, we adhere to WHA Group's stakeholder engagement policies and guidelines, which encompass both internal operations and business partners. We also developed a comprehensive risk management approach that covers Environmental, Social, and Governance (ESG) dimensions to promote sustainable operations and deliver maximum value to all relevant stakeholders.

This approach comprises a variety of activities that focus on fostering meaningful stakeholder engagement, while maintaining transparency and appropriately addressing the concerns of local stakeholders, as outlined below:

THE ASSESSMENT OF THE IMPACT ON STAKEHOLDERS OR COMMUNITIES IN THE AREA

WHAUP has conducted assessments of the social, economic, and environmental impacts of operations

on local communities. These assessments serve as a foundation for identifying key issues, mitigating risks, and promoting positive outcomes that the company can bring to the community. We carried out field surveys to gather feedback from residents in communities surrounding WHA's industrial estates where we also operate to study the local social and economic conditions, including employment, hygiene, public utilities, and the general living conditions of the population. The surveys also aimed to understand existing environmental issues affecting people's daily lives. Moreover, the study covered community awareness of and interest in project-related information, satisfaction with various aspects of project implementation, and collected community feedback and suggestions regarding past activities. These insights are used to inform the planning and execution of future community engagement initiatives.

In addition, WHAUP has conducted Environmental Impact Assessment (EIA) studies prior to the construction and implementation of the projects. These assessments cover areas within a 5-kilometer radius of the project sites to evaluate potential environmental and social impacts that could affect nearby communities. We also employ a public participation process to ensure that impacts are properly reviewed, mitigated, and managed. Close monitoring and control measures are implemented to prevent environmental impacts such as chemical leaks, wastewater discharge, noise pollution, and air pollution from industrial activities, this to avoid incidents or trends that could adversely affect surrounding communities.

CLEAR COMMUNICATION CHANNELS

WHAUP has established accessible and transparent communication channels for stakeholders in the area, enabling them to express opinions, raise concerns, or request information conveniently and promptly. We have implemented social engagement guidelines and various communication channels, including telephone, email, participatory activities, surveys, the appointment of local community representatives, and whistleblowing platforms (see more details under the Business Ethics section). These channels are used to communicate community development initiatives and mitigate the impacts of our operations, while also gathering feedback and complaints from the community. Additionally, we use a Unified Operation Center (UOC) system to collect and display real-time data from our environmental monitoring systems across project sites and operational areas. This enhances transparency and builds trust among communities. The disclosed data is verified to ensure compliance with government regulations requiring public access to environmental monitoring results.

EMPOWERING STAKEHOLDERS IN THE AREA

WHAUP in collaboration with WHA Group, organizes training sessions and knowledge-enhancing activities tailored to local stakeholders to equip them with the necessary skills and knowledge for effective communication with WHAUP. For instance, training is provided on communication channels related to our operations and services for customers located within our areas of responsibility. This includes regular meetings held with various stakeholder groups such as Japanese executives, HR managers, safety teams, community leaders, and other local stakeholders. We also provide them with the updates and direct contact channels.

We also organized activities to provide training on the use of the WHASApp application, which was developed in 2024, to help stakeholders learn how to use this new communication platform between stakeholders and WHAUP. Through the application, users can receive updates directly and submit inquiries or report incidents occurring in the area. This application enhances communication capabilities with stakeholders and helps foster mutual understanding and collaboration between WHAUP and the community.



REGULAR OPINION SURVEY AND REVIEW OF ENGAGEMENT STRATEGY

WHAUP regularly conducts stakeholder perception surveys and reviews our stakeholder engagement strategy in collaboration with WHA Group to gather perspectives and suggestions from local stakeholders. The results of these surveys are used to refine and improve engagement by using survey research methods, including field surveys and questionnaires, as tools to collect data in alignment with the research objectives. The study includes the following details:

- **Target Group for the Opinion Survey and Sampling Methods:** This includes government agencies, community leaders, and household representatives.
- **Survey Tool for Social-Economic Conditions:** Questionnaires is used as a tool to collect data from target group and designed to have structured survey consisting of both closed-ended and open-ended questions.
- **Preparation for Field Survey:** Ensuring the accuracy of the questionnaires for each target group and coordinating before conducting the survey in the field.
- **Field Data Collection Method:** Training field interview staff to ensure they have the knowledge and understanding to provide information and answer questions from respondents. They also trained to review questionnaires and sampling methods for households in the study area.
- **Data Analysis:** The analysis of the interview via the questionnaires are processed by using statistical software for descriptive statistics.
- **Data interpretation:** is conducted using descriptive statistics, including frequency, percentage, and average, to describe various aspects such as opinions on the project, awareness of project-related information, and satisfaction with the project's social responsibility efforts. In addition, a Likert scale is used to interpret satisfaction levels, where the highest level of satisfaction is rated at 5 and the lowest at 1.



MEETING WITH STAKEHOLDERS TO DISCUSS CONCERNS

WHAUP and WHA Group, organizes tripartite meetings involving representatives from WHAUP, WHA Group, Industrial Estate Authority of Thailand, community representatives, and local government agencies. These meetings are held regularly to listen to feedback from communities and local authorities, as well as to discuss emerging issues and jointly seek solutions. Such meetings help foster trust and strengthen relationships. They are organized across various WHA's industrial estate locations, as follows:

- Environmental Quality Inspection Committee Meetings at WHA Chonburi Industrial Estate 1 are held every 6 months or twice a year.
- Environmental and Health Impact Monitoring Committee Meetings and Public Relations and Community Relations Committee Meetings at WHA Chonburi Industrial Estate 2 are held every 6 months or twice a year.
- Environmental Impact Monitoring Committee Meetings at Eastern Seaboard Industrial Estate (Rayong) and WHA Eastern Seaboard Industrial Estate 1 are held every 6 months or twice a year.
- Environmental Monitoring and Community Relations Committee Meetings to oversee the implementation of environmental mitigation measures and monitor the impact at WHA Eastern Seaboard Industrial Estate 2, WHA Eastern Seaboard Industrial Estate 3, and WHA Eastern Seaboard Industrial Estate 4 are held every 6 months or twice a year.
- Tripartite Committee Meetings to oversee and follow up on the implementation of measures to reduce environmental and health impacts at WHA Eastern Industrial Estate (Map Ta Phut) are held every month or 12 times a year.
- Environmental Impact Monitoring Meetings at WHA Rayong Industrial Land are held every 2 months or 6 times a year.
- Environmental Impact Monitoring Meetings at WHA Rayong 36 Industrial Estate are held quarterly or 4 times a year.



In addition, a Cooperation Committee Meeting for Engagement is held to elevate industrial estates into Eco-Industrial Town. These meetings are organized at industrial estates managed by WHA Group, with each industrial estate holding meetings every 6 months. During these meetings, WHA Group provides an opportunity for representatives of companies located within WHA's industrial estates to join, alongside Industrial Estate Authority of Thailand, community representatives, local government agencies, and WHA Group representatives.



COMPLAINT MONITORING AND MANAGEMENT

WHAUP has established an effective grievance mechanism to monitor, review, and address issues or concerns raised by stakeholders in the area. This system enhances accountability and supports continuous improvement. We have created multiple channels for submitting complaints and actively promotes them through various media, such as the corporate website, digital platforms, Facebook, public announcements for all stakeholder groups, and the WHASApp application. These channels enable stakeholders to receive updates, submit complaints or concerns, and monitor our operations. Additionally, during meetings or community engagements, WHAUP's representatives regularly inform stakeholders of the available contact and grievance channels. All feedback and complaints are reviewed by the Corporate Social Responsibility and Environmental Committee and working team which convene monthly to determine appropriate community development approaches and report to Board of Directors.

PHILANTHROPIC ACTIVITIES EVALUATION

WHAUP continuously reviews and evaluates stakeholder engagement efforts in local communities to assess the effectiveness of its various activities. These evaluations have confirmed that the initiatives deliver meaningful and beneficial outcomes for the communities. A transparent evaluation process is applied to assess social activities, and lessons learned from past initiatives are systematically gathered. These insights are then used to continuously enhance our Corporate Social Responsibility (CSR) strategies. The stakeholder engagement review will be conducted on an annual basis. Thus, WHAUP measures performance on stakeholder engagement by:

- Community Satisfaction Survey (Units: as operation unit/%), conducted at the end of the engagement projects and activities.
- Operating strictly within the Environmental Impact Assessment (EIA) framework, which includes site visits for gathering community feedback both before and after project implementation.
- Complaints Channels, e.g., complaints received through whistleblowing channels, and other communication channels, from local stakeholders, e.g., communities, authorities, media, associations and NGOs.
- Social Return on Investment (SROI)

3.4 METRICS AND TARGETS

WHA Group has established both short-term and long-term goals for its community development operations, focusing on creating positive impacts in the economic, social, and environmental aspects through Corporate Social Responsibility (CSR) initiatives that align with the needs of the community. The results from the 2024 fiscal year demonstrate success in achieving the set goals.

In 2024, WHAUP carried out a variety of social activities for communities located within a 5-kilometer radius of WHA's industrial estates. A total budget of 17.83 Million Baht was allocated for these social initiatives, as shown in the table below. Our employees dedicated a total of 11,761 working hours to CSR activities. These community development projects benefited a total of 213,448 community members. In the same year, we engaged with 175 out of 177 villages in Rayong, Chonburi, and Saraburi Province which is 99% for the engagement coverage area, which meets our target. To ensure continued outreach to surrounding community members, we have set the 2025 community engagement target at 99%.

GOALS AND PERFORMANCE OF COMMUNITY ENGAGEMENT

Year	2022	2023	2024	Target 2024
Goals and Performance of Community Engagement (%)	98	98	99	99

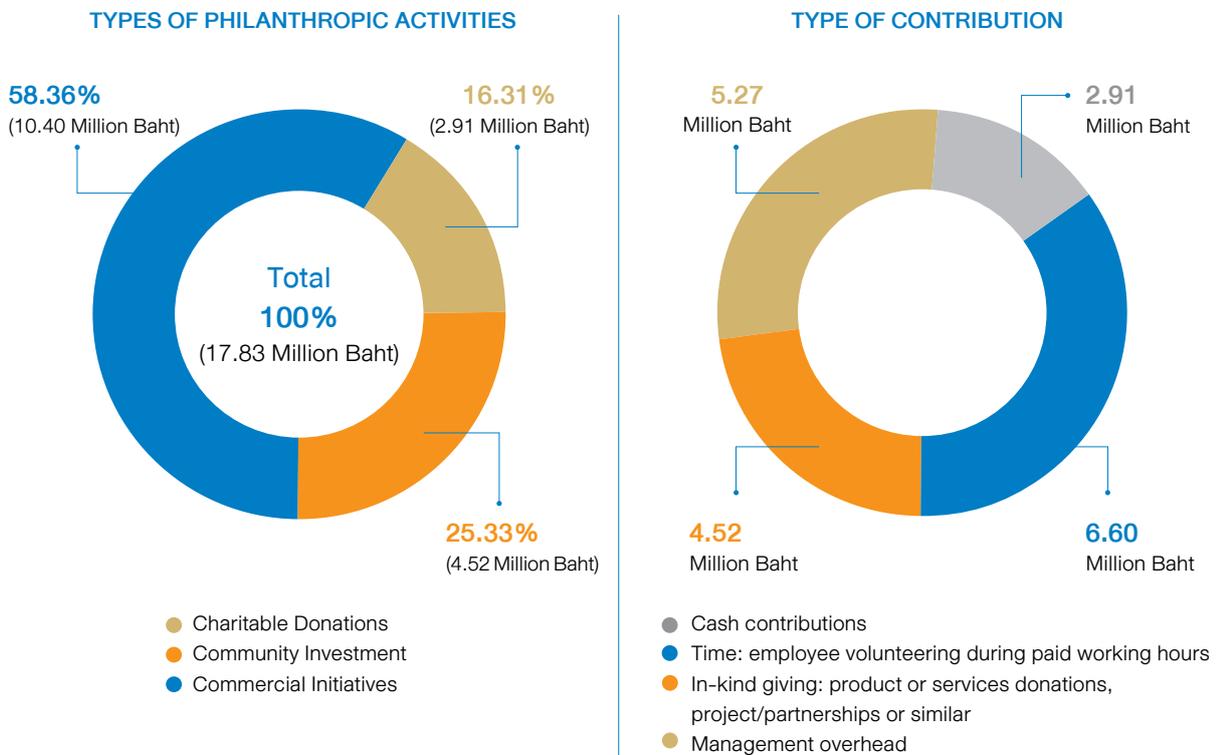
STAKEHOLDER ENGAGEMENT COVERAGE PERFORMANCE

Topic	Coverage (%)
Social Impact Assessments, including Gender Impact Assessments	100%
Environmental Impact Assessments and Ongoing Monitoring	100%
Public Disclosure of Results of Environmental and Social Impact Assessments	100%
Stakeholder Engagement Plans based on Stakeholder Mapping	100%
Broad based Local Community Consultation Committees and processes that include Vulnerable Groups	100%
Works Councils, Occupational Health and Safety Committees and Other Worker Representation Bodies to deal with Impacts	100%
Formal Local Community Grievance Processes	100%

4. HIGHLIGHT PROJECTS

We recognize that only controlling operations to avoid negative impacts and engaging with communities may not be sufficient to achieve the goal of improving quality of life and well-being, in line with WHA Group’s mission, “WHA : WE SHAPE THE FUTURE”. Therefore, WHAUP in collaboration with WHA Group, has implemented long-term projects focused on three key areas of community development: education, well-being, and the environment. These initiatives are designed to reach all stakeholder groups, including vulnerable populations to strengthen community livelihoods and address community concerns.

TYPES OF PHILANTHROPIC ACTIVITIES AND TYPE OF CONTRIBUTION



2024, WHAUP and WHA Group implemented various projects to promote sustainable development and growth together with surrounding communities, divided into six categories as follows: Educational Promotion Projects, BCG Economy Model Promotion Projects, Community Development Projects, Health Promotion Projects, Environmental Conservation Projects, Industrial Estate Design Projects by WHA to include social areas, and Community Revitalization or New Town Development Projects, as follows.

4.1 EDUCATION DEVELOPMENT PROJECTS WHA ANNUAL SCHOOL CONTRIBUTION PROJECT

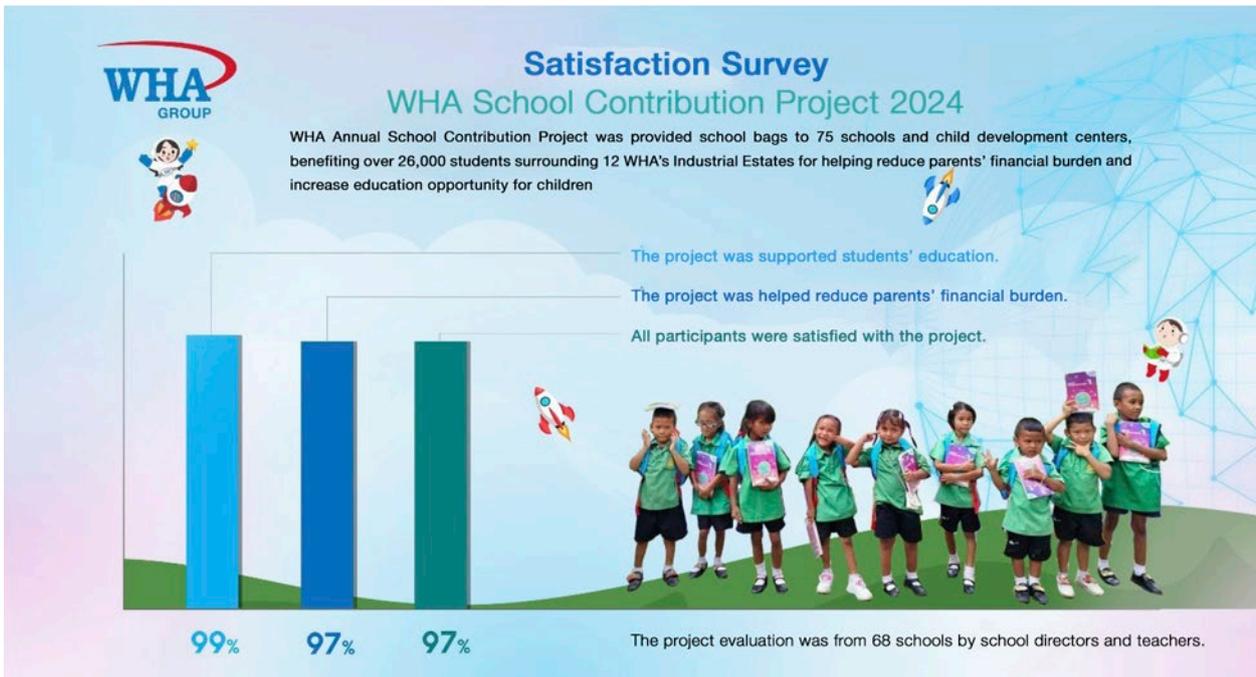


In the academic year 2024, WHAUP and WHA Group, in collaboration with business partners and operators in WHA’s industrial estates, organized activities to provide educational equipment to the students in the schools surrounding WHA’s industrial estate areas for the 26th consecutive year. This year, school bags and educational supplies were donated to 75 schools and early children development centers, benefiting over 26,000 students. This initiative reflects our commitment to supporting communities surrounding industrial estates in improving their quality of life, while also promoting sustainable environmental stewardship. This is also aligned with WHA Group’s mission, “WHA : WE SHAPE THE FUTURE,” which emphasizes development toward sustainable growth under the approach of “The Ultimate Solution for Sustainable Growth”.



The 2024 satisfaction survey on the “WHA Annual School Contribution Project”, conducted among school principals and teacher representatives who participated in the initiative, revealed that 99% of respondents believed the project contributed to supporting students’ education. Additionally, 97% agreed that the project helped reduce the financial burden on parents, and 97% believed it supported students’ educational development.

Overall, all participants were satisfied this WHA Annual School Contribution Project in 2024. WHAUP remains committed to continuously supporting education of youths, the future of the nation, in line with the concept “WHA : WE SHAPE THE FUTURE” to create the strong foundation of sustainability development.



WECYCLE PROJECT: UPCYCLING SCHOOL BAGS FROM PLASTIC BOTTLES

WHAUP organized an Upcycling Schoolbag Donation Project for students who donated plastic bottles through the WeCYCLE initiative. This project is the collaboration of WHA Group with customers and entrepreneurs. There were 5 schools participate in this project: Klong Kram School, Ban Nong Suea Chang School, Ban Mab Lambid School, Wat Chak Phak Kood School, and Wat Nong Bon Child Development Center. The school bags were created through students' participation in waste segregation and donation of used plastic bottles to the WeCYCLE project. These bottles were then processed through an upcycling method to produce school bags, in combination with water hyacinth fibers sourced from the constructed wetland wastewater treatment system managed by WHAUP within WHA's industrial estates. This process is carried out by Ban Chak Mahat Community Enterprise Group, producing schoolbags that are donated to the students involved in the WeCYCLE project.



The Initiative aims to instill environmental awareness among youth and promote the learning of the 3Rs concept: Reduce, Reuse, and Recycle.

SHINE BRIGHTER WITH WHA PROJECT

WHAUP with WHA Group and Dr. Somyos Anantaprayoon Foundation delivered rooftop solar panel installation projects to 2 schools in Rayong Province under the “Shine Brighter with WHA” initiative. The first school, Nikom Sang Ton Eng Rayong 3 School, with a total of 838 students, received a solar system with a maximum capacity of 18.75 kilowatts (kWp), enabling the school to save up to 120,000 Baht per year in electricity costs, equivalent to 40% annually. The second school, Ban Nong Lalok School, with 160 students, received a system with a maximum capacity of 11.25 kilowatts (kWp), helping the school save up to 60,000 Baht per year, or 56% annually. This initiative promotes the use of clean energy, reduces utility expenses for schools, and fosters a sharing society in line with the sustainable development approach of the organization.



School	Nikom Sang Ton Eng Rayong 3 School	Ban Nong Lalok School
Power Generation Capacity	18.75 kWp	11.25 kWp
Installation Area (sq.m.)	85	44
Solar Panel (Watt)	625	625
Number of Panels	30	18
Inverter Capacity	30 kW	10 kW
Number of Inverters	1	1
Average Monthly Electricity Cost (Baht)	25,000	9,000
Average Annual Electricity Cost (Baht)	300,000	108,000
Monthly Electricity Cost Reduction (Baht)	10,000	6,000
Annual Electricity Cost Reduction (Baht)	120,000	60,000
Electricity Cost Savings (%)	40%	56%

The Shine Brighter with WHA project received funding support from the Dr. Somyos Anantaprayoon Foundation in collaboration with WHA Group to organize this initiative. Employees from WHAUP and WHA Group actively participated by joining a charity auction of personal items donated by executives from both WHAUP and WHA Group. Proceeds from the auction contributed to funding the installation of rooftop solar systems at 2 schools, with a total value of 715,900 Baht in 2024.

WHAUP took responsibility for the rooftop solar system installations by assigning expert engineers to design the system, prepare equipment, and coordinate a specialized installation team to ensure successful completion. WHAUP also provided knowledge on how to operate and maintain the solar system to school staff and arranged for ongoing maintenance visits to ensure the systems continue to perform efficiently.

ENHANCING ENVIRONMENTAL YOUTH NETWORK CAPACITY PROJECT FOR EASTERN ECONOMIC CORRIDOR DEVELOPMENT

As a subsidiary of WHA Group, we signed a collaboration agreement with the Eastern Economic Corridor Office (EEC) to organize activities aimed at enhancing the potential of youth environmental networks for the development of the Eastern Economic Corridor. This initiative, launched in the past year, provided students with opportunities to explore new knowledge and discover potential career paths. WHAUP in collaboration with WHA Group, supported projects designing and developing a household grease trap from Saint Louis School, Chachoengsao Province, which innovated a product to solve wastewater problems in the community and expand its application to wastewater treatment systems in industrial estates. Another project supported was the Rice Straw Pot from Mon Thong Wittaya School, addressing the issue of rice straw burning by farmers in Chachoengsao Province.

Through the collaboration between WHAUP and the EEC, this project serves as an important network to foster cooperation in supporting the new generation of youth in the EEC area to showcase their creativity, inventiveness, and develop innovations in the Environmental Youth Network Capacity Enhancement Project for Eastern Economic Corridor Development.



WHA SCHOLARSHIP PROJECTS

WHAUP believes that youth are a vital force in driving the country’s future, and that education serves as a fundamental pillar for community development and improving quality of life. However, we see that some highly talented and skilled students face constraint to access education due to financial constraints. Therefore, we have initiated a scholarship program to provide educational opportunities for underprivileged students and support their development into capable and empowered individuals. The program aims to enhance their skills and improve their quality of life.

1. SCHOLARSHIP PROGRAM FOR KINDERGARTEN, PRIMARY, AND SECONDARY SCHOOL STUDENTS

In 2024, WHAUP and WHA Group awarded scholarships to students in schools surrounding WHA’s industrial estates, with a total value of 1,227,760 Baht. Additionally, we supported Children’s Day activities with a contribution of 185,000 baht. These efforts reflect our commitment to supporting children and youth, who represent the future of the nation, in line with the concept “WHA : WE SHAPE THE FUTRURE”.



In 2024, we awarded scholarships through the “Seniors Sharing, Shaping Juniors” program in collaboration with the WHA Saraburi Industrial Land and the Community Relations Committee of companies within the WHA Saraburi Industrial Land. Scholarships totaling 120,000 Baht were awarded to underprivileged students. The program also distributed 48 school bags made from recycled plastic bottles under WeCYCLE Project to youth in schools near the WHA Saraburi Industrial Land. We also organized an Environmental Conservation and Drug Awareness Youth Camp, providing students with experiential learning opportunities outside the classroom while instilling environmental awareness and resilience against drug abuse.

WHA Rayong Industrial Land, another operational area of WHA Group collaborated with the Community Relations Committee of companies in the WHA Rayong Industrial Land to organize the 2024 National Children’s Day event for schools in the Nong Lalok Subdistrict. As part of the activities, polo shirts for wearing on Buddhist religious day were donated, along with 30,000 Baht in scholarships for underprivileged students.

2. SCHOLARSHIP PROGRAM FOR STUDENTS UNDER THE DUAL VOCATIONAL EDUCATION SYSTEM PROJECT

Currently, the labor market in Thailand, including factories within industrial estates, has a high demand for skilled and well-trained workers. In response, the Office of the Vocational Education Commission initiated the Dual Vocational Education (DVE) program through collaboration between the education and industrial sectors. This program enables students to gain both theoretical knowledge and practical experience simultaneously, allowing companies and factories to train workers in alignment with their specific needs. However, many capable students face financial challenges that prevent them from completing the program. Recognizing this issue, WHAUP has partnered with Ban Khai Technical College in Rayong Province to provide scholarships to academically outstanding but financially disadvantaged students under the Dual Vocational Education program, which has been ongoing for 15 years.



In addition, WHAUP has helped coordinate with the customers located within WHA’s industrial estates to provide opportunities for students to undertake internships during their studies. Ban Khai Technical College is the only institution in Eastern Economic Corridor (EEC) that fully meets the qualifications for participation in the Dual Vocational Education program. From the program’s inception in 2003 through 2024, a total of 124 students have participated. In 2024, we awarded full scholarships to 9 students and exceeding 100% of the program’s graduates have successfully secured employment with WHAUP customers within WHA’s industrial estates. Furthermore, collaboration with WHA Group, awarded one full undergraduate scholarship with the condition that the recipient must return to serve as a teacher at Ban Khai Technical College for a specified period. This initiative aims to support the college in maintaining a high-quality teaching workforce capable of producing skilled and capable graduates in the future.

This project promotes educational opportunities for youth and also contributes to the development of a skilled workforce, serving as a key driver in supporting and propelling the growth of Eastern Economic Corridor (EEC). The EEC spans strategic areas in Rayong, Chonburi, and Chachoengsao Province, where major infrastructure projects are underway, including motorways, dual-track rail systems, as well as the expansion of U-Tapao International Airport and seaports. These infrastructure developments are among the core initiatives aimed at enhancing the region’s competitiveness and attracting private sector investment. We recognize the importance of supporting the development of a high-quality workforce that will play a vital role in driving various industries forward, particularly in factories located within WHA’s industrial estates, which are part of Eastern Economic Corridor (EEC) area.

3. THE DUAL VOCATIONAL EDUCATION (DVE) PROJECT TO SETTING A GOOD EXAMPLE IN THE COMMUNITY



WHAUP and WHA Group have collaborated with Ban Khai Technical College in selecting students to participate in the dual vocational education program, based on their knowledge, capabilities, and eagerness to learn. Selected students are given the opportunity to work as trainees in factories and business establishments located within WHA’s industrial estates. The Mechanical Engineering Department of Ban Khai Technical College has approximately 600 students, most of whom undergo internships at world-class factories within Eastern Economic Corridor (EEC) area. This is made possible through the support of WHAUP and WHA Group, who provide scholarships and act as coordinators between the factories and the college. The EEC Model Type A learning approach enables students to build upon their knowledge through hands-on experience with global manufacturers and has been well received.



In addition, some students have had the opportunity to work in the United States and Australia such as at CoorsTek Advanced Materials (Thailand) Co., Ltd. And CNC manufacturing factories, gaining experience in technology across the entire supply chain, with salaries ranging from 60,000 to 80,000 Baht. Additionally, some students have had the chance to intern in China, specifically at Primax Electronics Co., Ltd. In Guangxi, China, before returning to continue their internship at Primax Electronics (Thailand) Co., Ltd., with fee of charge. Upon graduation, these students secure employment immediately, with starting salaries between 20,000 to 30,000 Baht, reflecting the college’s capability in producing quality skilled labor for the future.

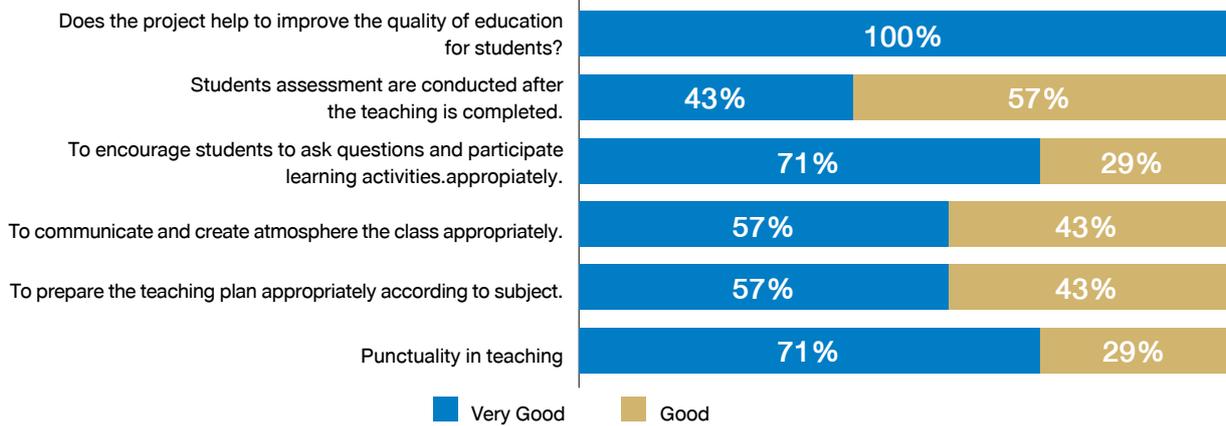


WHA TEACHER FELLOWSHIP PROGRAM

As we recognize primary education as an essential foundation in our operating area. Many primary schools around WHA industrial estate areas are currently dealing with issues related to a lack of qualified teachers. WHAUP with WHA Group support contract primary school teachers in various subjects for the schools within industrial estate of WHA in Rayong and Chonburi Province. In 2024, we provided a total of 1,260,000 Baht funds for teachers from 7 different schools in the area. From the evaluation of funding provided to the teachers, we found that approximately 2,000 students from 7 schools had been trained by teachers sponsored by WHAUP each year.



WHA Teacher Fellowship Program



THAI-CHINESE LANGUAGE EXCHANGE PROGRAM: TEACHING THAI TO CHINESE SPEAKERS AND CHINESE TO THAI SPEAKERS

In 2024, WHAUP and WHA Group collaborated with Chonburi Technical College under the Center for Language Education and Cooperation (CLEC) program to organize Thai and Chinese communication courses. The objective was to promote cultural exchange between Thailand and China, as well as to provide language training for the workplace, enabling Thai and Chinese executives to work together seamlessly. A total of 50 participants enrolled in the program, with 34 attending the Chinese language course and 16 attending the Thai language course.



Satisfaction with the Thai-Chinese Language Learning



After completion of the program, participants reported highly positive feedback. A total of 94% rated the training content as appropriate and comprehensive (good to very good), while 100% found the content easy to understand and practically applicable (good to very good). Additionally, 94% stated that the training significantly improved their Chinese or Thai communication skills (good to very good), and 100% indicated that they could effectively apply what they had learned to their work (good to very good). Overall, 100% of participants expressed satisfaction with the training outcomes (good to very good), reflecting a highly successful and impactful program.

THE BUILDING RENOVATION AND REPAIR PROJECT FOR SCHOOLS SURROUNDING WHA'S INDUSTRIAL ESTATES

Another collaboration between WHAUP and WHA Group, we organized activities to encourage employee participation in supporting local educational institutions. WHA's volunteer employees have joined efforts to repaint school buildings to improve cleanliness, aesthetics, and create a conducive learning environment for youth. In addition, we implemented infrastructure improvement and repair projects at schools surrounding WHA's industrial estates. These included renovations of classrooms, canteens, and school fences, as well as landscaping efforts in Rayong, Chonburi, and Saraburi Province. These initiatives aim to enhance learning environments and educational facilities for students in communities near the operational areas, thereby contributing to improved educational outcomes and fostering sustainable development alongside economic growth.

We also supported projects to improve school drinking water systems to ensure quality and sufficient supply for students. WHAUP also supported the roof renovation of the children's play area at Ban Map Pa Wai School, Nong Bua Subdistrict, Ban Khai District, Rayong Province, and the canteen renovation at Ban Khlong Yai Mueang School, Bang But Subdistrict, Ban Khai District, Rayong Province. In addition, WHAUP delivered a waste-sorting facility to Ban Hin Khong School, repainted and improved playgrounds at Chak Mahat School and Ban Hin Khong School, repainted the sports field at Chumchonborisatnamtantawanook School, repainted school buildings at Hua Chuat School, repaired the roof at Ban Pa Wai School, supported the construction of a covered walkway connecting buildings at Ban Nong Krab School, and renovated restrooms at Nikhom Sang Ton Eng Rayong 3 School. WHAUP also organized the WeCYCLE activity to promote used plastic bottle separation in schools around WHA's industrial estates, focusing on raising environmental awareness through the 3Rs principles (Reduce, Reuse, and Recycle), helping reduce waste and increase efficient plastic reuse.



ORGANIC VEGETABLE GARDEN PROJECT FOR SCHOOL LUNCHES

WHAUP is part of Organic Vegetable Garden Project to encourage the development of school kitchen gardens. The initiative aims to supply safe and healthy ingredients for school meal preparation while fostering hands-on learning experiences for students beyond the classroom setting. The project has been launched at Ban Mae Nam Khu School in Mae Nam Khu Subdistrict, Pluak Daeng District, Rayong Province; Ban Map Yang Phon School in Map Yang Phon Subdistrict, Pluak Daeng District, Rayong Province; Ban Phayun School in Ban Chang Subdistrict, Ban Chang District, Rayong Province; Map Ta Phut Municipal School in Huai Pong Subdistrict, Mueang Rayong District, Rayong Province; and Ban Map Lam Bit School in Ban Bueng Subdistrict, Si Racha District, Chonburi Province. These organic gardens provide schools with safe ingredients for school lunch programs while helping to lower procurement expenses. Furthermore, the project promotes independent learning and



the development of agricultural skills among students. Any surplus vegetables that exceed the schools' needs may be sold, offering an opportunity to generate additional income and expose students to basic principles of management and entrepreneurship.

4.2 BCG ECONOMY MODEL SUPPORT ACTIVITIES

WeCYCLE PROJECT

WHAUP has continued to implement the WeCYCLE project, which exemplifies the integration of collaboration among the public sector, private sector, and local communities in environmental conservation and transforming challenges into new opportunities. The name “WeCYCLE” is derived from “We” + “Recycle/Upcycle,” reflecting the cooperation between WHAUP, WHA Group, and various businesses within WHA’s industrial estates to create sustainable innovations from environmental challenges, making the world a better place for future generations.

From 2022 to the present, the WeCYCLE project has welcomed participation from 116 companies and organizations. In 2024, WHAUP and WHA Group partnered with Industrial Estate Authority of Thailand (IEAT) and leading organizations including PTT Global Chemical Public Company Limited (GC), SCG Packaging Public Company Limited (SCGP), and BSGF Company Limited (BSGF) to implement projects under WeCYCLE concept as follows:



1. WeCYCLE PROJECT: USED PLASTIC BOTTLES

WeCYCLE: Used Plastic Bottles is a pilot project under the WeCYCLE project, this program was launched through the collaboration of WHAUP and WHA Group, in partnership with PTT Global Chemical Public Company Limited (GC), and partners. The project invites participating companies to donate used plastic bottles, which are then processed through GC’s logistics system under the “YOUTURN” project. The recyclable plastics are upcycled and woven together with water hyacinth fibers sourced from WHA Clean Water for Planet project. The water hyacinth fibers are produced by Ban Chak Mahat community in Rayong Province, providing supplementary income and employment opportunities for the local community, thereby fostering sustainable coexistence with WHA’s industrial estates. The project aims to raise environmental awareness, reduce the volume of plastic waste sent to landfills, and mitigate carbon dioxide emissions and global warming.



The project collects donated plastic bottles from employees, customers, industrial estate operators, local authorities, and schools. YOUTURN collection bins are placed at WHA Tower and key locations within WHA's industrial estates. In addition, WHA's WeCYCLE team schedules electric vehicles (EVs) to collect donated plastic bottles from project members and transport them to the WeCYCLE center within the area. The bottles are then sent to a waste-sorting facility operated by a local community enterprise. Through the YOUTURN logistics system; the materials are delivered to a world-class recycling plant managed by PTT Global Chemical Public Company Limited (GC). The donated PET plastic bottles are upcycled together with water hyacinth harvested from our wastewater treatment ponds. These ponds require regular monthly dredging, which presents an opportunity for Ban Chak Mahad community to collect water hyacinths, thereby helping to reduce WHAUP's monthly disposal costs. In addition, WHAUP and WHA Group can sell the hyacinth fibers to textile weaving companies for the production of upcycled fabric, generating over 70,000 Baht in revenue. The resulting materials are used to produce school bags for donation to participating schools, as well as laptop and iPad sleeves as souvenirs. Additionally, pillowcases infused with antiviral agents are produced and donated to hospitals and bedridden patients who require special care.

From 2022 to 2024, WeCYCLE project collected a total of 58 tons of used plastic bottles, equivalent to approximately 3,391,751.18 bottles of 600 milliliters. This amount corresponds to a reduction of 59.45 tons of carbon dioxide emissions, based on the Carbon Emission Factor for landfill waste. The environmental benefit is equivalent to planting 6,605 trees to absorb carbon dioxide over the course of one year.



2. WeCYCLE PROJECT: USED PAPER

WeCYCLE Project: Used Paper project is a continuation of the initiative to add value to used materials, turning them into useful resources while fostering environmental awareness within the WHA Eco System. The project collects used paper donations to be recycled into educational tools for students in schools surrounding WHA’s industrial estates, such as bookshelves and reading tables. The project is carried out in collaboration with SCG Packaging Public Company Limited, which recycles the donated paper and manufactures learning support products for school libraries. Since its launch in 2023, the project has collected 68 tons of used paper, resulting in a reduction of 198.15 tons of carbon dioxide emissions based on the Carbon Emission Factor for landfill waste. This is equivalent to planting 2,216 trees to absorb carbon dioxide over the course of one year.



3. WeCYCLE PROJECT: USED COOKING OIL

WeCYCLE: Used Cooking Oil is a new project part of WeCYCLE in 2024, where WHAUP, WHA Group and our partners BSGF, a joint venture between Bangchak Corporation Public Company Limited, BBI Public Company Limited, and Thanachok Oil Light Company Limited collaborated. The project involves purchasing used cooking oil from WeCYCLE members, which is then processed into Sustainable Aviation Fuel (SAF). This initiative supports sustainable resource management by promoting clean energy, reducing reliance on fossil fuels, and lowering greenhouse gas emissions. It also contributes to climate change mitigation and aligns with the Bio-Circular-Green (BCG) economic model.

In 2024, we successfully collected 1.1 tons of used cooking oil. This effort resulted in a reduction of 0.36 tons of carbon dioxide emissions, based on the Carbon Emission Factor for landfill waste. The environmental benefit is equivalent to planting 40 trees to absorb carbon dioxide over the course of one year. This project reflects WHAUP's strong commitment to advancing the circular economy while creating shared value for society and the environment in a sustainable manner.



4. WeCYCLE DAY 2024

WHAUP, as part of WHA Corporation Public Company Limited (WHA), in collaboration with Industrial Estate Authority of Thailand (IEAT), joined forces with leading organizations such as PTT Global Chemical Public Company Limited (PTTGC), SCG Packaging Public Company Limited (SCGP), and BSGF Company Limited to organize “WECYCLE Day 2024.” The event was held on December 12, 2024, at the Convention Hall, Pattana Golf & Sports Resort, Chonburi Province. This marks the 3rd consecutive year of the event, which has been held annually since 2022, with the aim of raising awareness for a sustainable future. The event also featured the collection of used materials donated by members of WeCYCLE project.

At WeCYCLE Day 2024 event, upcycled product displays were showcased to inspire attendees. As a gesture of appreciation to members participating in the initiative, WHAUP and WHA Group presented awards to outstanding WeCYCLE partners. Certificates of recognition made from recycled materials were presented to 94 companies and organizations, and plaques of honor-also made from recycled materials-were awarded to the top five partners with the highest contributions of used plastic bottles, used paper,



and used cooking oil. The ranking was based on the equivalent reduction in carbon dioxide emissions.

The top 5 outstanding contributors among WeCYCLE project members

No.	Company Name	Total CO ₂ Reduction	WeCYCLE ใช้ขวดพลาสติก		WeCYCLE กระดาษที่นำกลับมาใช้		WeCYCLE ใช้น้ำมัน ครัวเรือน	
			Used Plastic bottles (kg)	CO ₂ Reduction (kgCO ₂ e)*	Used Paper (kg)	CO ₂ Reduction (kgCO ₂ e)**	Used Cooking oil (kg)	CO ₂ Reduction (kgCO ₂ e)****
1	NRB BEARINGS (THAILAND) LTD.	27,483.24	1,038.20	1,070.38	9,005.10	26,384.94	85.00	27.91
2	STARS TECHNOLOGIES INDUSTRIAL LTD	22,132.13	1,804.01	1,859.93	6,909.31	20,244.28	85.00	27.91
3	BRIDGESTONE METALPHA (THAILAND) CO., LTD.	14,045.64	1,149.93	1,185.58	4,389.10	12,860.06	0.00	0.00
4	MAZDA POWERTRAIN MANUFACTURING (THAILAND) CO., LTD.	8,940.27	1,432.00	1,476.39	2,547.40	7,463.88	0.00	0.00
5	DAIKYONISHIKAWA (THAILAND) CO., LTD.	7,631.30	169.20	174.45	2,545.00	7,456.85	0.00	0.00
	WHA GROUP**	8,413.76	110.60	114.03	2,827.00	8,283.11	50.60	16.62





Over 3 years of WeCYCLE project, WHAUP and WHA Group have received strong support from project members. In 2022, the first year of the initiative, the project received 10 tons of used plastic bottles through “WeCYCLE: Used Plastic Bottles” campaign, resulting in a reduction of 11 tons of carbon dioxide emissions based on the Carbon Emission Factor for landfill waste. In the second year, 2023, the project expanded its membership and launched “WeCYCLE: Used Paper” campaign, collecting 25 tons of used paper and 26 tons of used plastic bottles. These efforts contributed to a total reduction of 102 tons of carbon dioxide equivalent. In the recent year 2024, the project introduced “WeCYCLE: Used Cooking Oil” campaign, collecting 1.1 tons of used cooking oil, which helped reduce carbon dioxide emissions by 0.36 tons. Combined with the ongoing bottle and paper donation campaigns, the WeCYCLE project achieved a total greenhouse gas reduction of 146 tons of carbon dioxide equivalent in 2024.



According to a satisfaction survey on the WeCYCLE project, 96% of participating members reported feeling happy to be part of a sustainable environmental conservation initiative. Additionally, 94% expressed happiness after attending the “WeCYCLE Day – Shaping the Future with Sustainability” event. The project also helped enhance CSR sustainability activities for 95% of participating companies, and 97% of members indicated their intention to continue participating in WeCYCLE activities in 2025. Furthermore, the project conducted an additional survey to explore interest in expanding beyond the current activities WeCYCLE: Used Plastic Bottles, WeCYCLE: Used Paper and WeCYCLE: Used Cooking Oil. Members suggested a variety of additional recyclable or upcyclable materials, including plastic scraps from production, PU-coated plastic, milk cartons, hospital medicine bags, glass bottles, cups, foam, aluminum cans, wood, big bags, metal, and wire scraps.

5. WeCYCLE Learn & Share

In 2024, together with WHA Group, WHAUP organized a waste separation knowledge-sharing activity with WeCYCLE project members, including SAIC Motor-CP Co., Ltd., Daikyo Nishikawa (Thailand) Co., Ltd., Fabrinet Co., Ltd., and Stars Technology Industrial Co., Ltd. The objective was to educate employees on proper waste separation practices, and foster a mindset aligned with the 3Rs concept: Reduce, Reuse, and Recycle.



4.3 COMMUNITY DEVELOPMENT PROJECTS VULNERABLE GROUPS SUPPORT PROGRAM

WHAUP commits to improve the quality of life for vulnerable groups, such as the elderly, persons with disabilities, and bedridden patients. In collaboration with WHA Group, we organized health promotion activities in Pluak Daeng and Ban Khai District in Rayong Province, as well as in various areas of Chonburi Province, including Ban Surasak, Ban Ra Woeng, and Ban Khao Khan Song. Additionally, survival kits were distributed to these groups in communities surrounding WHA's industrial estates, with a total budget of over 140,000 Baht.



Therefore, we organized activities to support the elderly in communities under the care of WHA's industrial estate areas in 2024. These included supporting Thai traditional music training for the elderly club in Nong Bua Subdistrict, Ban Khai District, Rayong Province, as well as providing support for pétanque clubs and organizing sports competitions for senior citizens. These activities aim to encourage social engagement among the elderly, contributing to both improved mental well-being and physical health.



In addition, we also supported a drug rehabilitation program run by the Rayong Provincial Social Rehabilitation Center. This initiative was carried out in collaboration with public sector agencies such as Pluak Daeng District Hospital and Subdistrict Health Promoting Hospitals. The program included physical and mental rehabilitation activities, as well as attitude adjustment sessions, with the aim of restoring quality of life for patients in Pluak Daeng District, Rayong Province.

COLLABORATING PROJECT WITH ENTREPRENEURS

WHAUP, WHA Group and business operators within WHA's industrial estates, has implemented various initiatives aimed at improving the quality of life for surrounding community members, as follows:

WHA Saraburi Industrial Land, in collaboration with its customers, established a Community Relations Committee. The committee members jointly raised funds to support community development projects aimed at improving the quality of life for nearby residents. Currently, 65 factories have joined as members, contributing a combined budget of 1,900,000 Baht. In 2024, WHA Saraburi Industrial Land and Community Relations Committee launched "Seniors Sharing, Shaping Juniors" project to provide scholarships to underprivileged students and distributed school bags from the WeCYCLE: Used Plastic Bottle project at the multipurpose building of the Nong Pla Mo Subdistrict Administrative Organization, Saraburi Province.



Furthermore, WHA Rayong Industrial Land and its customer group also established a Community Relations Committee with 22 member factories with the budget of 720,000 Baht in 2024. The budget was used for various activities such as providing scholarships, promoting religious activities, and other initiatives in collaboration with the Corporate Social Responsibility Committee of WHA Rayong Industrial Land, supporting sustainable community development in all dimensions.



COMMUNITY CAREER PROMOTION PROJECT

WHAUP places great importance on sustainable coexistence by supporting community livelihoods to enhance income and quality of life through vocational promotion activities. These include inviting expert speakers for knowledge exchange and supporting vocational training for communities. In 2024, with WHA Group, we supported the development of products and community activities as follows:

- Suan Phueng Pluak Daeng Enterprise by providing honey storage equipment to the enterprise in Tasit Subdistrict, Pluak Daeng District, Rayong Province, and continuously purchasing honey products from the community.
- Planting of sunn hemp, marigold, and sunflower flowers in Nong Lalok and Ban Chak Mahad Subdistricts, Ban Khai District, Rayong Province, to generate additional income and foster community activities.
- Development of local fabric products through organizing training projects on natural dye fabric printing arts and supplying equipment to the tie-dye fabric enterprise group in Nong Bua Subdistrict, Ban Khai District, Rayong Province.
- Providing materials and equipment for stingless bee farming to members of the Makham Khu Stingless Bee Community Enterprise in Makham Khu Subdistrict, Nikom Phatthana District, Rayong Province.
- Raising frogs and growing chemical-free vegetables in baskets by the Nong Bua Women's Development Group in Ban Khai District, Rayong Province.
- Developing local food to improve quality, appearance, and market appeal to create additional income for the community going forward.



WHAUP and WHA Group, also participated in organizing a training, seminar, and study visit program aimed at enhancing the capacity and effectiveness of 90 members of the Women Volunteer Group and community leaders from Bang But Subdistrict, Ban Khai District, Rayong Province. The program was held at the Sufficiency Economy Learning Center in Ban Tako Lang, Ratchaburi Province. It aimed to strengthen the knowledge and skills of participants by facilitating the exchange of local wisdom and best practices from other communities, which could be adapted and applied to sustainable community development. The initiative also enhanced the ability of women volunteers and community leaders to transfer knowledge on career development and promote income generation within their communities.

WHA E-JOB POOL PROJECT

WHA E-Job Market is an online job fair initiative organized by WHAUP and WHA Group as part of their ongoing social responsibility efforts. The project leverages technology to support companies and operators within industrial estates in Rayong and Chonburi provinces by enabling them to post job vacancies through an online platform. This platform helps match employers' workforce needs with job seekers' qualifications and expectations. It is easily accessible to job seekers nationwide, including recent graduates from various educational institutions. Job opportunities can be conveniently searched via the website <https://www.wha-industrialestate.com/en/job-pool> or by scanning the provided QR code.



Click
<https://www.wha-industrialestate.com/en/job-pool> or QR Code

WHA E-Job Market project aims to promote employment in communities surrounding WHA's industrial estates through collaboration with local agencies. The project collects job applicants' data and forwards it to WHAUP's clients for their consideration, who then post job vacancies. This creates positive outcomes for all parties involved: WHA Group, its clients, and the communities. For WHA Group, the project helps secure skilled and capable employees to meet workforce needs, especially in production roles, enabling WHAUP to fill vacancies quickly and efficiently. For the communities, it provides members with accessible and transparent opportunities to find new jobs and participate in fair application processes. Moreover, it opens doors for new skilled personnel to join organizations and fill available positions. To date, many global corporations have established themselves within WHA's industrial estates, creating tens of thousands of jobs for local residents.

อัปเดต
ตำแหน่งงาน

WHA Job Pool

แหล่งงานในนิคมอุตสาหกรรมของ WHA Group

	SRF INDUSTRIES (THAILAND) LTD.	
	Electrical Technician	2 ตำแหน่ง
	Electrical Engineer	1 ตำแหน่ง
	QA Technician	1 ตำแหน่ง
	NISSEI PLASTIC MACHINERY (THAILAND) CO., LTD.	
	เจ้าหน้าที่ BOI (BOI Staff)	1 ตำแหน่ง
	BASF CHEMCAT (THAILAND) LTD.	
	Asst.Manager - QA	1 ตำแหน่ง
	Asst.Manager - Production Slurry	หลายตำแหน่ง
	Asst.Manager - Key Account	1 ตำแหน่ง
	Officer - HR & Admin	1 ตำแหน่ง
	Automation Engineer	1 ตำแหน่ง
	Senior Officer - Ap & Tax (Contract)	1 ตำแหน่ง
	NAKAMURA PRECISION (THAILAND) CO., LTD.	
	Inspector	1 ตำแหน่ง
	QA Staff	1 ตำแหน่ง
	GRAND TECH PRECISION MANUFACTURING (THAILAND) CORPORATION LTD.	
	พนักงาน QC	3 ตำแหน่ง

WHA PAN GAN PROJECT

WHAUP develop a project called “WHA PAN GAN PROJECT” with WHA Group, supporting local community products and specialties made by local people who live in communities around industrial estate of WHA in Chonburi and Rayong Province. The project has been promoted through social media platforms such as Facebook, YouTube, and the website pangan.whaindustrialestate.com/en/home, which serves as a digital marketplace connecting sellers and buyers. It also provides a space to showcase a wide variety of products, including handicrafts, herbal products, and local delicacies. This initiative helps expand market access for community products, enabling them to reach consumers worldwide and promoting sustainable sales growth.

Additionally, the project continues to welcome new sellers and supports sales channels for small entrepreneurs, food producers, small industries, and housewife groups. The project aims to broaden the visibility of community products. As part of our social responsibility efforts, it seeks to create jobs, increase household income, and foster sustainable economic development within communities, laying a strong foundation for future generations. The initiative also

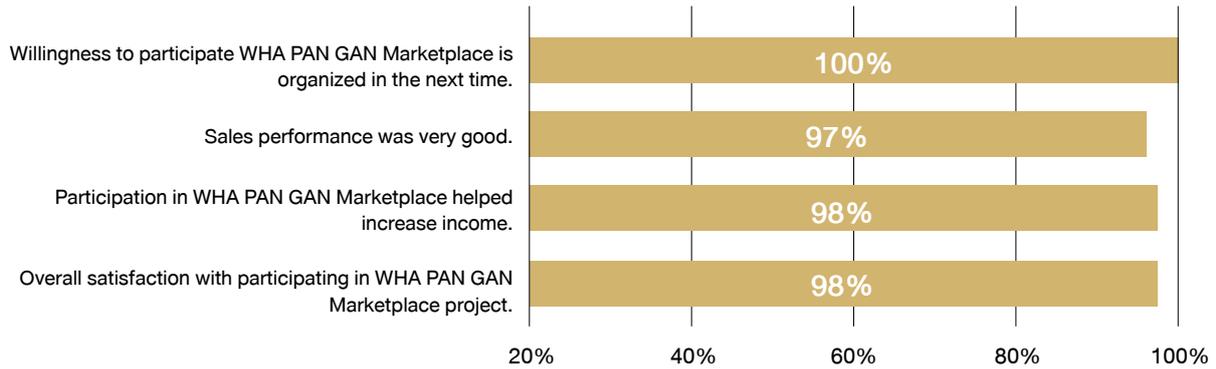
helps preserve community heritage by promoting traditional craftsmanship and distinctive local food products from various communities. These skills and knowledge are passed down through generations, emphasizing the use of natural ingredients and agricultural products. The project has continued to receive positive feedback and strong participation.

In 2024, we invited community enterprises to participate in the WHA PAN GAN Marketplace event held at Auto Alliance (Thailand) Co., Ltd., located in Eastern Seaboard Industrial Estate (Rayong) on 31 July 2024 and 31 October 2024. Nine community shops participated, selling various products such as food, snacks, beverages, woven crafts, and naturally dyed clothing, generating total community income of more than 70,600 Baht.

From a survey of 9 community vendors who participated in the WHA PAN GAN Marketplace project, it was found that vendor satisfaction with the event was 98%. Additionally, 98% of vendors agreed that participation in the project helped increase their income, 97% reported very good sales performance, and 100% expressed willingness to participate in future WHA PAN GAN Marketplace events.



Vendor Satisfaction with WHA PAN GAN Marketplace Project



WHAUP and WHA Group continue the support to Ban Chak Mahad Community Enterprise by promoting their local products, including woven handicrafts made from water hyacinth sourced from WHA’s water treatment system. These products were entered into the EEC Select Model Community Products competition and received the Model Community Product Award from the Eastern Economic Corridor Policy Committee (EEC Office). Additionally, WHAUP facilitated the community’s participation in the 35th Nai Lert Flower & Garden Art Fair 2024, held under the theme “Blossoming Culinary Art” on 28 - 31 March 2024, at Nai Lert Park, Witthayu Road, Bangkok. This event helped raise the profile of the community products and enhanced their recognition. The sales from this event generated over 30,000 Baht in additional income for the community.

In addition, we also purchase products from this project for our New Year gift baskets distributed to various agencies, clients, and stakeholders. WHAUP also facilitated the sale of these community products by organizing booths at corporate meetings and seminars, generating additional income for the communities amounting to over 1 Million Baht.



4.4 HEALTH PROMOTION PROJECT SPORT SUPPORT PROJECT

WHA recognize of the importance on promoting health and sports, with a focus on encouraging youth and local residents to prioritize their well-being, fostering community unity, and raising awareness about drug prevention. This is achieved through sports activities that aim to enhance football skills among youth and the community, enabling them to compete at the national level. In 2024, we in collaboration with WHA Group, organized football training courses for young people in local communities to inspire and develop their athletic abilities. Additionally, we supported football-related activities for local and community teams and promoted other sports, such as pétanque for the elderly and community fun runs to encourage healthy living.

In addition, we contributed over 11 Million Baht in support of football activities, providing funding to Rayong FC, Chonburi FC, and other local football teams in Rayong and Chonburi provinces. We also played a role in supporting football tournaments held at WHA Rayong Stadium in Rayong Province, in line with our commitment to promoting health awareness and encouraging sports participation among youth and the general public. Furthermore, we provided 90,000 Baht in funding for rugby activities to help create opportunities for young people and local residents to develop their athletic skills and engage in physical exercise-contributing to better health and stronger community bonds.



INFLUENZA VACCINATION PROGRAM

WHAUP continue to enhance the quality of life for the elderly and vulnerable groups who are at risk of complications from influenza and may lack access to vaccines. In collaboration with WHA Group, we supported the provision of 1,100 doses of influenza vaccines. These were distributed as follows: 250 doses in Pluak Daeng Subdistrict, Pluak Daeng District, Rayong Province; 350 doses in Khao Khansong Subdistrict, Chonburi Province; and 500 doses in Bo Win Subdistrict, Si Racha District, Chonburi Province. This initiative aims to protect the elderly and vulnerable individuals from influenza and promote good health among community members. It aligns with WHAUP’s social responsibility policy to enhance the quality of life and well-being of communities surrounding our areas of operation.



MEDICAL EQUIPMENT SUPPORT PROJECT

WHAUP recognizes the importance of access to public healthcare services and the well-being of residents in its operational areas. In collaboration with WHA Group, we provided financial support and donated essential medical equipment to local public health offices, subdistrict health-promoting hospitals, and hospitals located near WHA's industrial estates in Rayong, Chonburi, and Saraburi Province. This initiative aims to ensure that local healthcare facilities are adequately equipped to provide quality medical care, thereby improving access to healthcare services for people in the surrounding communities.



THE COLLABORATION WITH SIRIRAJ HOSPITAL AND THAI RED CROSS SOCIETY TO HOST BLOOD DONATION ACTIVITIES

In 2024, WHAUP and WHA Group organized two blood donation drives in partnership with Siriraj Hospital at WHA Tower (Head Office). The events welcomed participation from employees, clients, and nearby communities, with a total of 110 donors contributing 49,500 milliliters (ml) of blood. Additionally, WHA's industrial estate offices in Rayong, Chonburi, and Saraburi Province partnered with Thai Red Cross Society to conduct further blood donation campaigns. These efforts resulted in 1,437 participants donating a combined total of 598,650 milliliters (ml) of blood.



ONE WHA RUN PROJECT

As we recognize the importance of health and physical activity, in collaboration with WHA Group, organized the "One WHA Run – United for One Goal" mini-marathon on Sunday, February 4, 2024, from 5:30 to 9:00 a.m. at WHA Eastern Seaboard Industrial Estate 2 in Chonburi Province. The event aimed to promote good health and foster sustainable relationships among customers, government agencies, and local communities. The event was a great success, attracting over 2,000 participants.



4.5 ENVIRONMENTAL CARE PROJECT

WHAUP is committed to conducting business in alignment with ESG principles by maintaining a balance between the environment, society, and business operations. We continuously develop services that meet customer needs sustainably and efficiently. To support environmental conservation efforts, we have organized a variety of activities as follows:



WHA CLEAN WATER FOR PLANET PROJECT

WHA Clean Water for Planet Project was initiated in 2016. The goal of this project is to treat and manage wastewater while simultaneously raise awareness about the value of water resources. The project also focuses on sharing knowledge to promote proper understanding within communities and instilling a sense of natural resource conservation across society. We have constructed and handed over wastewater treatment systems to various communities to improve the quality of canal water. These systems use environmentally friendly constructed wetland technology inspired by His Majesty King Bhumibol Adulyadej the Great (King Rama IX). To date, WHAUP has implemented the project as follows:

1. TRAINING COURSES FOR STUDENTS AND KNOWLEDGE SHARING WITH LOCAL ORGANIZATIONS

With the collaboration with various academic institutions to develop curricula focused on water resource conservation and wastewater management. University students are given the opportunity to participate in internship programs each year to enhance their knowledge and skills in water and wastewater management through guidance from field experts. In 2024, a total of 5 students joined the internship program: 2 students from Suranaree University of Technology, 2 students from King Mongkut's University of Technology North Bangkok, and 1 student from Mahasarakham Rajabhat University.



In addition, WHAUP has supported knowledge transfer to various organizations, particularly government agencies by hosting study visits for groups such as executives from the Metropolitan Waterworks Authority, officials from the Department of East Asian Affairs, and community leaders, to learn about water treatment and water management systems within WHA's industrial estates. These visits aim to enhance understanding of sustainable water and wastewater management and enable participants to apply the knowledge gained for the benefit of their respective organizations in the future.

We also welcomed students and representatives from various organizations to observe and learn about SMART ECO Industrial Estates, Smart Office Solutions, and Smart Logistics systems. These are integrated with the Unified Operation Center (UOC) at WHA Tower (headquarters), which monitors environmental conditions such as air quality, water, wastewater, rainfall levels, and provides real-time traffic management. In 2024, approximately 1,900 individuals from government agencies, universities, and interested parties visited to gain a deeper understanding of environmental operations and sustainable water management, as well as the application of technology and education to effectively address long-term environmental risks.



2. WHA CLEAN WATER FOR PLANET PROJECT FOR COMMUNITIES

The key objective of WHA Clean Water for Planet project for communities is to develop a modern and environmentally friendly wastewater treatment system that treats wastewater before it is discharged back into natural water sources. The project also aims to create recreational areas to sustainably enhance the quality of life in the communities. Implementation areas include the following:

PLUAK DAENG CONSTRUCTED WETLAND PROJECT



The Pluak Daeng Constructed Wetland Project, implemented under the WHA Clean Water for Planet initiative, is one of WHAUP's proud achievements delivered to the Pluak Daeng Subdistrict Administrative Organization in Rayong Province, near Eastern Seaboard Industrial Estate (Rayong). This project utilizes natural technologies to treat wastewater through vegetation and microorganisms. In 2024, the project successfully diverted a total of 102,190 cubic meters of wastewater from community water sources and returned over 100,000 cubic meters of treated water (equivalent to the amount of incoming wastewater) back to the community. The project benefited more than 480 households, or over 1,200 residents.

NONG KHLA CONSTRUCTED WETLAND PROJECT



We expanded WHA Clean Water for Planet initiative to Nong Khla Subdistrict Municipality in Chanthaburi Province, in collaboration with project partners. Covering an area of 15 rai, the constructed wetland system can currently treat up to 400 cubic meters of wastewater per day, with future capacity expansion planned to 800 cubic meters per day. The project utilizes natural plants such as cattails and heliconias, along with solar energy to operate the system. In 2024, the project successfully treated approximately 142,400 cubic meters of community wastewater, benefiting over 2,000 households by improving both health and quality of life through enhanced water management and environmental conservation.

COMMUNITY WATER SHORTAGE ALLEVIATION PROJECT

1. SUPPORT FOR COMMUNITY WATER MANAGEMENT

WHAUP has implemented projects to support water management in various communities, emphasizing the development of sustainable wastewater treatment systems and the use of constructed wetland technology for wastewater treatment. WHAUP has also extended assistance by supporting water supply projects, providing over 50,000 liters of water for consumption in drought-affected areas. These include communities in Moo 4, Khao Khansong Subdistrict, Si Racha District, Chonburi Province, and Bo Win Police Station, Si Racha District, Chonburi Province. Water trucks have been deployed to distribute water to communities facing shortages of tap water.



2. SUPPORT AND IMPROVEMENT OF VILLAGE WATER SUPPLY SYSTEMS

In 2024, WHAUP supported the improvement of the village water supply system for the community in Village No. 11, Nong Bua Subdistrict, Ban Khai District, Rayong Province. Our staff carried out upgrades to the water pumping system at Khlong Yai Muang School, which serves as a source of clean water for the villagers. This effort aimed to alleviate drought problems and enhance access to clean water in various areas, particularly in Village No. 8, Bang But Subdistrict, and Village No. 11, Nong Bua Subdistrict, Ban Khai District, Rayong Province.



3. RECLAMATION WATER PROJECT

WHAUP have also introduced innovation in producing high-quality water for industrial use through the Reclamation Water Project. This project involves reusing treated wastewater to produce high-quality water for customers within WHA's industrial estates. In 2024, we achieved a production target of 20,919 cubic meters per day, which helped reduce water withdrawal from natural sources and decreased wastewater discharge into public canals by 7.635 million cubic meters per year. Additionally, the water can be further treated into demineralized reclaimed water or high-quality water suitable for industrial customers within WHA's industrial estates. The project aims to ensure long-term water resource security and reduce competition for natural water sources between communities and industrial customers, enabling sustainable access to clean and high-quality water for both communities and industrial clients.

WATER HYACINTH PRODUCTS

WHAUP, WHA Group with PTT Global Chemical Public Company Limited (GC) have been developing a new fabric product since 2021 by upcycling water hyacinth fibers blended with plastic (PET) fibers and cotton fibers. This process helps reduce waste volume and adds value to recycled materials. The resulting products include school bags and other high-quality, environmentally friendly goods.

In addition, WHAUP has supported the production of water hyacinth-based products in Ban Khai Subdistrict, Rayong Province, as a continuous effort to generate income and create employment opportunities within the community. This initiative addresses the economic needs of society through WHAUP's business processes by utilizing water hyacinth collected from wastewater treatment ponds in the Eastern Seaboard Industrial Estate (Rayong). Community members can use the water hyacinth to produce baskets and woven products free of charge, helping reduce raw material costs by approximately 100 Baht per bundle and establishing a stable monthly source of raw materials. In 2024, WHAUP jointly purchased 300 woven baskets from the project, valued at 141,000 baht, to be used as gift hampers for customers and stakeholders



each year. This initiative generated a total income of 590,000 Baht for the community, or an average of 3,000 Baht per person per month.

Moreover, WHAUP and WHA Group also generated income from the sale of water hyacinth fibers harvested from ponds within the industrial estate to buyers who process them into upcycled products. This not only created additional income but also helped reduce the cost of water hyacinth disposal by approximately 70,000 Baht.

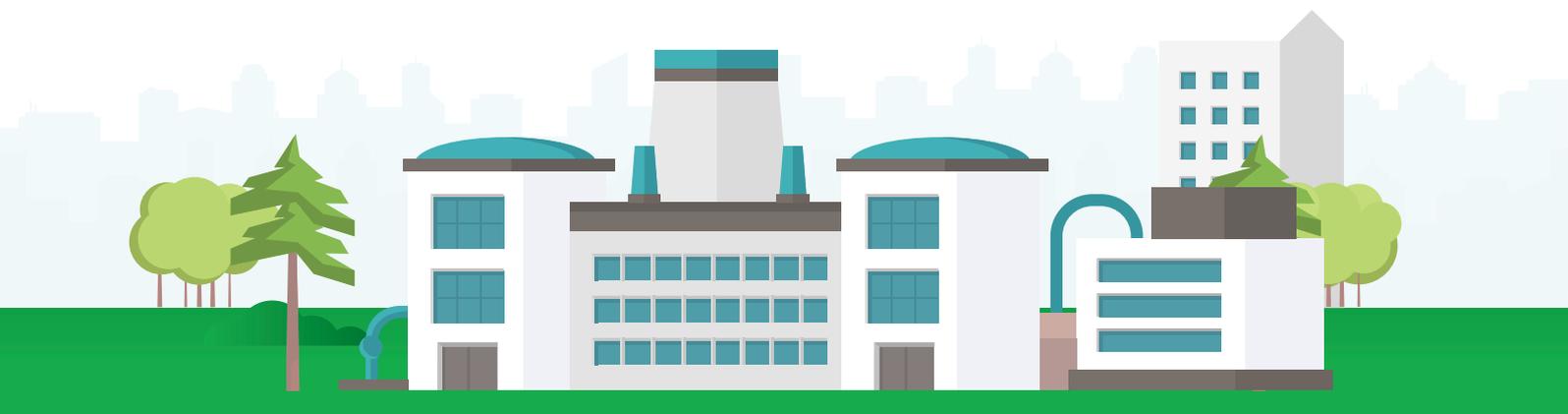
BIODIVERSITY PROMOTION PROJECT

WHAUP, WHA Group and both governmental and private agencies have collaborated to support activities that promote biodiversity and ecosystem conservation within communities. WHAUP's involvement in 2024 included the following activities:

- The “Revive and Restore Life to the Rivers in Rayong Province” event held at Ban Mab Kla community, Khlong Kiw Subdistrict, Ban Bueng District, Chonburi Province, in cooperation with the Rayong Provincial Office of Natural Resources and Environment and other government agencies in Rayong Province.



- Volunteer activity to develop canals along the Rayong River area (Wat Lahan Rai), in collaboration with Nong Bua Subdistrict Administrative Organization, Ban Khai District, Rayong Province.
- Elephant food plant cultivation and artificial salt lick creation to serve as an elephant feeding ground, in cooperation with East Water Public Company Limited at Khao Ang Rue Nai Wildlife Sanctuary, with participation from community leaders and local residents.

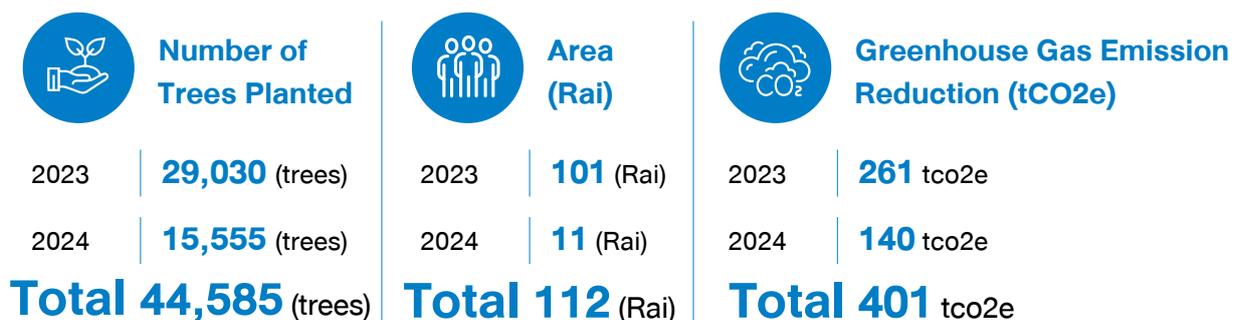


TREE PLANTING PROJECT UNDER THE CONCEPT “LET’S ZERO TOGETHER”

WHAUP, WHA Group, the Industrial Estate Authority of Thailand, and over 500 participants from 70 companies operating within WHA’s industrial estates, jointly organized a large-scale tree-planting activity to sustainably reduce greenhouse gas emissions and combat global warming. The activity took place at WHA Eastern Seaboard Industrial Estate 2 and WHA Eastern Industrial Estate (Map Ta Phut), under the ecological forestation concept approach that mimics natural forests. This method involves planting 2–3 local tree species per square meter in a mixed pattern to enhance carbon dioxide absorption, achieving a rate of 15.20 tCO₂e per rai per year. A total of 15,755 trees were planted over 8 rai of land, including species such as Lagerstroemia (Tabaek), Mahogany, Neem, Khae Na, Yang Na, Acacia, Mulberry, Ma Mao, and Banyan trees. This initiative is part of WHAUP efforts to mitigate the impacts of climate change and promote greener, healthier environments within industrial areas.



A survey of participants in the tree-planting activity found that over 94% felt happy taking part in the event. Additionally, 92% of participants felt proud to be part of the project, 96% believed it was a collaborative effort to create a greener world for future generations, and 95% felt that the tree planting effectively contributed to reducing carbon dioxide emissions in line with the Let’s Zero Together goal. Furthermore, 89% of participants agreed that the event was well-organized, with suitable venues and timing, and 94% expressed their willingness to join future tree-planting activities to continue promoting environmental conservation and reducing greenhouse gas emissions.





WHAUP and WHA Group participated in a native tree planting activity at Ban Khao Hin School in Bo Win Subdistrict, Chonburi Province. This initiative was part of an environmental education program aimed at raising awareness among students about the importance of trees within ecosystems and the impacts of climate change on our daily lives. The program emphasized that trees not only provide shade, but also generate oxygen, absorb carbon dioxide, serve as habitats and food sources for wildlife, and help maintain healthy soil and water systems.



ENVIRONMENTAL MONITORING NETWORK (ENVIRONMENTAL DETECTIVE) PROJECT

Together with WHA Group, WHAUP organize the 2024 “Environmental Monitoring Network (Environmental Detective) Project. This initiative aimed to raise environmental awareness among youth living near industrial estates. The primary objectives were to foster a sense of environmental conservation, promote waste separation, and educate participants on how to distinguish between clean and polluted water in public water sources. The program also encouraged youth to actively engage in environmental protection and to share their knowledge with their families and communities, fostering broader community awareness and participation in environmental conservation efforts.

The schools around WHA’s industrial estates that participated in the activities are as follows:

1. Ban Khao Hin School (Nikornrat Bamrung), Bo Win Subdistrict, Si Racha District, Chonburi Province with 100 participated students
2. Ban Bo Win School, Bo Win Subdistrict, Si Racha District, Chonburi Province with 100 participated students
3. Ban Phan Sadet Nai School, Bo Win Subdistrict, Si Racha District, Chonburi Province with 100 participated students
4. Ban Phan Sadet Nok School, Khao Kan Song Subdistrict, Si Racha District, Chonburi Province with 100 participated students
5. Chumchonborisatnamtantawanaok School, Ta Sit Subdistrict, Si Racha District, Chonburi Province with 100 students participated
6. Ban Pluak Daeng School, Pluak Daeng Subdistrict, Pluak Daeng District, Rayong Province with 100 participated students
7. Ban Mae Nam Khu School, Mae Nam Khu Subdistrict, Pluak Daeng District, Rayong Province with 100 participated students
8. Ban Map Lam Bid School, Khlong Kiu Subdistrict, Ban Bueng District, Chonburi Province with 182 participated students

In addition, we also conduct a session teaching students about waste separation, efficient resource use, recycling, and living in an environmentally friendly way. Color-coded waste bins were provided to all eight participating schools, along with explanations of the concepts of waste segregation and recycling. This aimed to encourage the students to work together to keep the world clean. The students showed keen interest in separating recyclable materials and learned tips on reducing waste and reusing items, as well as caring for the environment around them. This is considered an important step in raising environmental awareness among youth from an early age.



4.6 DESIGNING WHA'S INDUSTRIAL ESTATE TO HAVE SOCIAL SPACES

WHAUP is committed to operating the business with social responsibility under the Bio-Circular-Green Economy (BCG) Model, which emphasizes a balanced integration of economic, social, and environmental considerations. This approach guides our operations in utilities and power, as well as the development of environmentally friendly infrastructure. In 2024, we undertook several initiatives to support the creation of community-oriented spaces within WHA's industrial estates, including the following:

DESIGNING ELECTRIC VEHICLE CHARGING STATION WITHIN WHA'S INDUSTRIAL ESTATE AREAS



As a power service provider, we commit to promoting the use of clean energy across our operational areas and encouraging both employees and customers to adopt cleaner energy solutions. In collaboration with WHA Group, we have installed electric vehicle (EV) charging stations within WHA's industrial estates to support the increased use of environmentally friendly electric vehicles and help reduce carbon emissions from traditional fuel combustion. This also promotes the use of EVs within the organization for tasks such as site monitoring and document delivery. All EV charging stations have been designed for easy access and are strategically located for convenience in WHA's industrial estates in Chonburi, Rayong, and Saraburi Province. These stations operate 24/7, ensuring accessibility at all times.

DESIGNING HEALTHCARE FACILITIES WITHIN WHA'S INDUSTRIAL ESTATE AREAS



In collaboration with WHA Group, WHAUP places great importance on the health and safety of individuals working in and around WHA's industrial estates. To ensure accessible and convenient healthcare services, we designed and established Samitivej Hospital Clinics within WHA's industrial estates. These clinics are intended to serve both industrial estate workers and nearby communities with prompt medical care. In 2024, Samitivej Hospital Clinic introduced a new service specifically for Chinese investors and professionals working in the area by providing access to doctors proficient in treating Chinese patients. The clinic has also launched an emergency ambulance service that is on standby to assist patients within the WHA's industrial estates. Furthermore, the clinic has enhanced its medical equipment to a high standard, enabling it to treat a full range of cases from minor illnesses to critical emergencies (green to red triage levels). This high-quality healthcare service aims to comprehensively meet the diverse healthcare needs of people within WHA's industrial estate areas.

DESIGNING OFFICES, COMMERCIAL BUILDINGS, AND INDUSTRIAL ESTATES TO BE LOCATED NEAR PUBLIC TRANSPORTATION

WHAUP with WHA Group prioritize the safety of individuals within and surrounding the WHA's industrial estates. To ensure effective emergency response, fire stations have been strategically established across all 12 WHA's industrial estates and industrial lands. Each station is staffed with professionally trained and certified safety personnel who are equipped with modern and comprehensive firefighting equipment. In addition to having well-prepared emergency teams, we conduct 24/7 safety monitoring within the estates to promptly respond to potential incidents. These proactive safety measures aim to provide assurance and build trust among workers operating within the estates and residents in nearby communities.



We prepared a comprehensive emergency evacuation plan covering all potential scenarios to ensure a prompt and organized response during critical situations. Annual fire evacuation drills are conducted with mandatory participation from all relevant stakeholders, including employees, customers, tenants, and community representatives. These drills help ensure that everyone is well-prepared in the event of an emergency and reinforce our commitment to minimizing any negative impact on surrounding communities. Moreover, we use an Emergency Control Center (ECC) system as part of its incident management protocol. This centralized system coordinates closely with local authorities to contain and manage emergencies that may affect industrial estates and adjacent areas. These proactive efforts reflect our strong commitment to safety risk prevention and management, while also strengthening stakeholder confidence in the safety and resilience of operations.

4.7 NEW TOWN DEVELOPMENT PROJECTS

WHAUP operates in alignment with the commitment of WHA Group, which places great importance on giving back to the communities. This is consistent with the statement made by Ms. Jareeporn Jarukornsakul, Chairman of the Executive Committee and Group CEO of WHA Corporation Public Company Limited: "At WHA, we believe in promoting sustainable growth not only through our industrial projects but also through our contributions to the well-being of local communities. This act of social support reflects WHA's commitment to making a positive impact in Thanh Hoa province and in every location where we operate". In 2024, WHAUP supported WHA Group in implementing various community development and restoration initiatives aimed at enhancing quality of life and fostering long-term, sustainable growth alongside WHAUP. The initiatives included:

COMMUNITY SUPPORT PROJECTS FOR DISADVANTAGED COMMUNITITES

As part of our corporate social responsibility, we committed to supporting local communities by addressing housing challenges for underprivileged families. In collaboration with WHA Group, we donated 250 Million Vietnamese Dong to Huong Hoa and Thieu Hoa District to support the construction of homes for 10 disadvantaged families. Additionally, WHAUP contributed to a joint donation of 300 Million Vietnamese Dong with the Dong Nam Economic Zone Authority to fund the construction of 6 houses for low-income families in Nghi Loc District.

This project aims to provide stable and secure housing while improving the living conditions of local communities. It seeks to create a safer living environment and enhance the well-being of the most vulnerable residents in the region. This initiative underscores our commitment to social responsibility through tangible contributions toward building resilient and sustainable communities. We also donated 400 gift sets containing essential items, valued at 200 million Vietnamese Dong to underprivileged families. These gifts offered meaningful support and brought joy during the Lunar New Year festival, further reinforcing our dedication to fostering strong community relationships. Through these efforts, we enhance the quality of life in these areas and lays the foundation for long-term community development.



5. IMPACTS ON STAKEHOLDERS AND ENVIRONMENT

In 2024, WHAUP operated under the mission “WHA : WE SHAPE THE FUTRURE”, reflecting WHA Group’s commitment to shaping a sustainable future for Thailand. This was achieved by driving industrial-level economic development in parallel with strengthening local community economies. We firmly believe that a resilient economy must be supported by two balanced pillars: the industrial sector and the community economy. With this belief, we committed to conducting the business responsibly, considering the interests of all stakeholders particularly local communities residing near its operational areas, who may be directly or indirectly affected by business activities. These impacts may include air pollution, wastewater, noise, waste, or risks associated with operational accidents. To address these concerns, we have established policies and designed initiatives aimed at minimizing negative impacts while maximizing positive contributions across various dimensions including vocational skill development, environmental conservation, and the enhancement of social infrastructure. Furthermore, WHAUP places great importance on fostering strong relationships with local communities by organizing stakeholder engagement activities. These efforts help build trust and prevent potential conflicts that could affect business operations. All these initiatives reflect

our unwavering commitment to responsible business practices and the role in driving sustainable growth for society, communities, and the environment. This is in alignment with WHA Group’s long-term pledge: “The Ultimate Solution for Sustainable Growth”, which aims to contribute to the enduring sustainability of both the organization and Thailand.

6. NEXT STEP

In the area of community development, WHAUP continues to advance initiatives aimed at enhancing the quality of life for people from all walks of life by creating opportunities for equitable access to essential resources. In 2024, we successfully achieved its community development goals and has set an ambitious target for 2025 which is to engage with 99% of local communities and to exceed 90% community satisfaction across all social and environmental projects. As a leading provider of utilities and power solutions, we are committed to building a robust and integrated business ecosystem that drives prosperity within communities, fostering sustainable growth at both the organizational and national levels. This commitment is further reinforced by WHA Group’s mission, “WHA : WE SHAPE THE FUTURE”, which emphasizes the importance of balancing business development with social and environmental progress to ensure long-term shared prosperity.



03

ENVIRONMENTAL DIMENSION



ENVIRONMENTAL POLICY AND MANAGEMENT SYSTEM

The escalating severity of environmental and climate challenges has made the adoption of clean energy and sustainable resource management essential for businesses worldwide. Investors, customers, and stakeholders increasingly expect companies to take environmentally responsible actions, such as adopting renewable energy, circular economy, biodiversity conservation, water resource management, and leveraging Artificial Intelligence (AI) to enhance environmental performance. These global expectations underscore the need for collaborative, sustainable operations with minimal environmental impact.

As a leading provider of utilities and power, WHAUP places importance of environmental management in creating positive outcomes for both the organization and society. WHAUP is committed to driving sustainable business growth through ongoing proactive initiatives in environmental stewardship and resource conservation. These efforts are supported by robust environmental management systems and preventive controls, including regular monitoring of key environmental indicators such as biodiversity, wastewater quality, waste disposal, air emissions, and resource use efficiency. These factors are aligned with WHAUP's business activities and its engagement with customers, partners, and surrounding communities

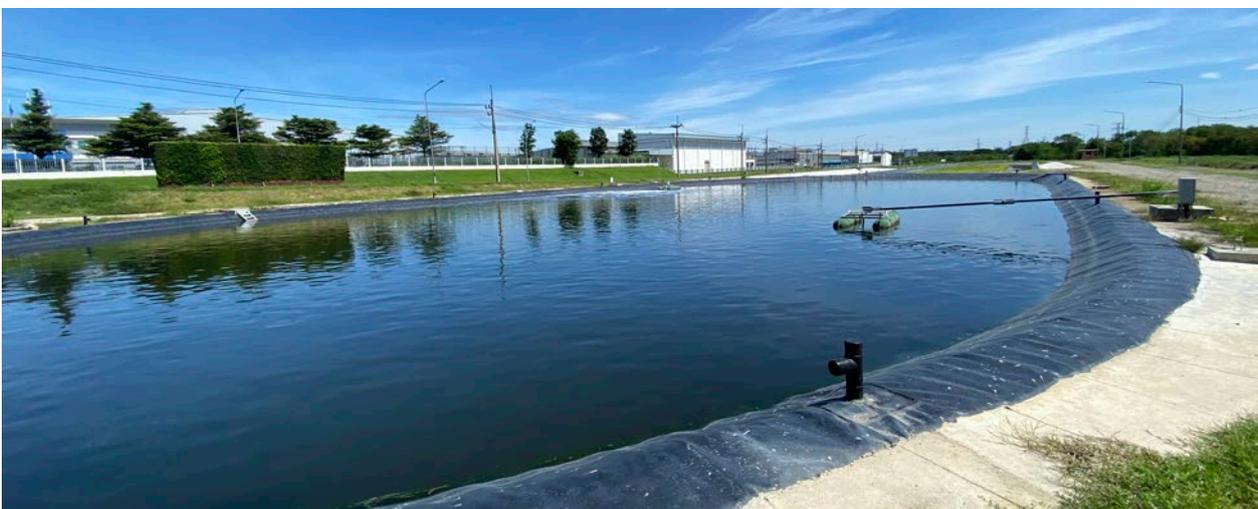
contributing to long-term business resilience and sustainability.

ENVIRONMENTAL QUALITY, ENERGY CONSERVATION AND BIODIVERSITY POLICY

WHAUP is committed to conducting its business with environmental responsibility, placing strong emphasis on energy conservation, renewable energy adoption, water resource management, and the promotion of biodiversity. These priorities are integral to ensuring sustainable operations and minimizing environmental impacts, including those on surrounding communities. To support this commitment, WHAUP has established environmental quality, energy conservation, and biodiversity policies in alignment with the broader WHA Group. These policies serve as a strategic framework guiding WHAUP's transition towards sustainable business practices and long-term environmental stewardship.



Click
Environmental Quality, Energy Conservation and Biodiversity Policy



Environmental Quality, Energy Conservation and Biodiversity Policy

WHAUP operates under a sustainability framework that is firmly rooted in its Environmental Quality, Energy Conservation, and Biodiversity Policies. These policies have been formally approved by both the WHAUP Board of Directors and the WHA Group Board, reflecting WHAUP's strong commitment to preventing and mitigating environmental impacts, enhancing operational quality, and ensuring compliance with applicable laws and international standards.

To operationalize these commitments, WHAUP has adopted the ISO 14001 Environmental Management System and the ISO 9001 Quality Management System, established by the International Organization for Standardization (ISO). These standards serve as key frameworks to drive continuous improvement in environmental performance, minimize ecological footprints, and foster sustainable development across all areas of the company's operations.



ENVIRONMENTAL IMPACT ASSESSMENT (EIA)

WHAUP requires that all of its projects undergo an Environmental Impact Assessment (EIA) study in strict accordance with the requirements and conditions stipulated in the Promotion and Conservation of National Environmental Quality Act, B.E. 2535 (1992). The EIA process evaluates environmental and social impacts within a 5-kilometer radius of the project site to ensure that potential risks are properly assessed, mitigated, and managed. The EIA report must be reviewed and approved by the Office of Natural Resources and Environmental Policy and Planning (ONEP) before any construction or operational activities commence.



Target

100% of the environmental impact monitoring measures stipulated by the EIA have been fully implemented.



WHAUP ensures full compliance with all environmental mitigation measures outlined in the Environmental Impact Assessment (EIA). The environmental performance of each project is monitored and reported semi-annually during January to June and July to December to respective regulatory authorities, including the Industrial Estate Authority of Thailand (IEAT), the Office of Natural Resources and Environmental Policy and Planning (ONEP), the Provincial Offices of Natural Resources and Environment, Provincial Industry Offices, and other relevant local government agencies.

In 2024, none of monitored environmental indicators exceeded the legal limits or EIA thresholds. Additionally, WHAUP oversees the overall environmental management practices of all operators within its industrial estates to ensure alignment with applicable regulations and recommended practices. In cases of non-compliance, WHA Group coordinates with IEAT to implement appropriate corrective actions. Further details on collaborative environmental practices with customers can be found in the relevant sections of this report.

As a producer and provider of utilities and energy services, WHA Utilities and Power Public Company Limited (WHAUP) recognizes the direct connection between its operations and the environment. With a deep awareness of its environmental responsibilities, WHAUP has consistently undertaken environmental management and resource conservation to drive business sustainably. The company aims to deliver high-quality services through internationally recognized solutions that minimize environmental impact. In collaboration with WHA Group, WHAUP continues to develop projects that integrate advanced technologies to support efficient environmental management. This includes the application of Artificial Intelligence (AI) to enhance environmental monitoring and operational controls, helping reduce direct environmental impacts.

Together with WHA Group, WHAUP also plays a key role in shaping the organization's environmental requirements, guidelines, and management plans.

These initiatives are designed to strengthen investment governance and ensure alignment with sustainable development principles. The integrated approach addresses several key areas, including:

- Conducting environmental due diligence prior to any investment to ensure legal compliance.
- Developing projects in line with environmental regulations and promoting resource efficiency.
- Maintaining investment properties with a focus on optimizing environmental performance and resource use.
- Establishing practical guidelines and providing training and communication to WHA's property managers and tenants to ensure all parties are well-informed and aligned with up-to-date environmental standards and regulations.

ENVIRONMENTAL STANDARDS AND PERFORMANCE

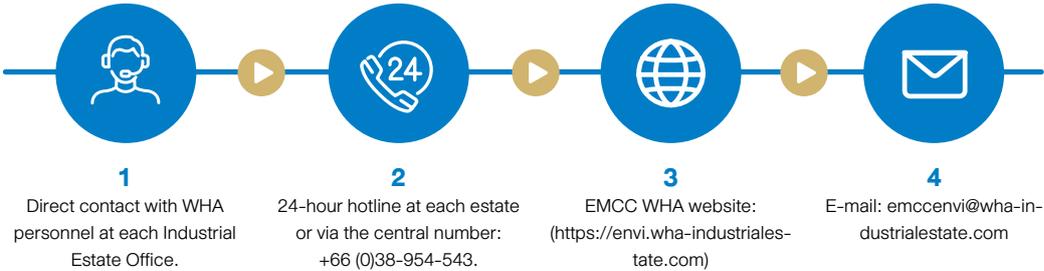
WHA Utilities and Power (WHAUP) have achieved certification under the ISO 14001:2015 Environmental Management System and ISO 9001:2015 Quality Management System, granted by the International Organization for Standardization (ISO). This reflects WHAUP's strong commitment to environmentally responsible business practices. WHAUP continuously monitors the performance of its environmental management systems through regular internal and external audits and actively pursues international certifications to ensure compliance with global standards and alignment with emerging global trends.



ENVIRONMENTAL COMPLAINT HANDLING PROCESS

WHAUP is committed to continuously improving the efficiency of its environmental management systems. As part of this effort, the company has established accessible channels through which stakeholders can report environmental concerns or lodge complaints. These channels reflect WHAUP’s dedication to stakeholder engagement and provide valuable input for enhancing its environmental management approach. WHAUP ensures that all stakeholders are well informed about these grievance mechanisms, which are managed in alignment with the ISO 14001:2015 standard. The process includes identifying the root cause of each issue, implementing appropriate mitigation and preventive measures, and taking steps to avoid recurrence in the future.

The available complaint submission channels are as follows:



With a rigorous environmental management approach, WHAUP had no environmental complaints and incurred zero costs related to environmental fines or penalties in the fiscal year 2024. This reflects the effectiveness of WHAUP’s governance framework and strict compliance with environmental laws and regulations.





WASTE MANAGEMENT



1. GLOBAL TREND

Effective waste management remains one of the world's most pressing challenges due to rapid population growth and urbanization, which have led to a continuous increase in waste generation. According to the Global Waste Management Outlook 2024 by the United Nations Environment Programme (UNEP), the global volume of municipal solid waste reached approximately 2.1 billion tons in 2023 and is projected to rise to 3.8 billion tons by 2050 if urgent management actions are not taken.

Current global waste disposal practices are still dominated by uncontrolled methods such as open dumping and burning, with landfill rates significantly outweighing the proportion of waste converted to energy or recycled. This trend shows no sign of slowing and poses serious risks to the environment and public health. In Thailand, the Pollution Control Department reported that in 2024, the total volume of municipal solid waste generated nationwide was 26.95 million tons, of which only 9.31 million tons were recovered or reused. A staggering 17.64 million

tons were non-recyclable, with nearly half being disposed of through improper methods. This growing volume of mismanaged waste not only degrades the environment but also results in significant resource loss and health risks.

Improper waste management practices such as landfilling and open burning are major contributors to soil and water pollution, and they generate greenhouse gas emissions that exacerbate climate change. In response, many countries and industries are adopting circular economy principles and Zero Waste models as core strategies to address these environmental challenges. These approaches are particularly relevant for industrial sectors that produce large volumes of operational and process-related waste.

Transitioning from traditional waste disposal methods to recovery and recycling-based models not only reduces the amount of waste requiring final disposal but also unlocks economic value by reintroducing resources into the production cycle. Furthermore, these models support global greenhouse gas reduction targets and contribute to sustainable growth. By embracing circular economic practices, businesses and governments alike can transform waste challenges into opportunities cutting waste management costs, mitigating environmental risks, and unlocking new pathways for sustainable business development.



2. OUR POSITION

WHA Utilities and Power Public Company Limited (WHAUP) places strong emphasis on the responsible management of waste generated from its operations. By integrating innovative technologies and forward-looking strategies, WHAUP continuously strives to reduce waste generation, conserve natural resources, and enhance resource efficiency across its business operations. At present, WHAUP adopts a Circular Value Chain approach, ensuring the implementation of appropriate waste management practices across all activities.

Upholding the principles of a Circular Economy, WHAUP is committed to preventing waste at its source through the selection of sustainable materials and the reintegration of residual materials into the value chain throughout their life cycle. This approach not only minimizes the volume of waste requiring landfill or incineration but also reduces energy consumption in waste treatment processes while generating economic value through the creation of new products from reused materials. In the past year, as part of WHA Group, WHAUP has successfully achieved zero waste to landfill or incineration without energy recovery for the second consecutive year and remains dedicated to sustaining this level of performance. In addition, WHAUP has actively collaborated with various business partners to implement and scale up effective waste management initiatives as part of its long-term sustainability strategy.

3. MANAGEMENT APPROACH

3.1 GOVERNANCE STRUCTURE

WHAUP is committed to enhancing its waste management processes in alignment with WHA Group's Environmental Quality Management,

Energy Conservation, and Biodiversity Policies. WHAUP also ensures full compliance with relevant waste management procedures outlined in the Environmental Impact Assessment (EIA) reports.

To ensure appropriate governance and compliance, WHAUP has established a Working Group, responsible for overseeing and verifying that all waste handling practices comply with legal and regulatory requirements. This Working Group assesses and classifies various types of waste generated from WHAUP's business operations and promotes the implementation of efficient waste management practices. The WHAUP's Environmental Committee is assigned to encourage management and employees to actively participate in waste reduction initiatives through various programs designed to minimize the environmental impacts of waste generation and disposal.

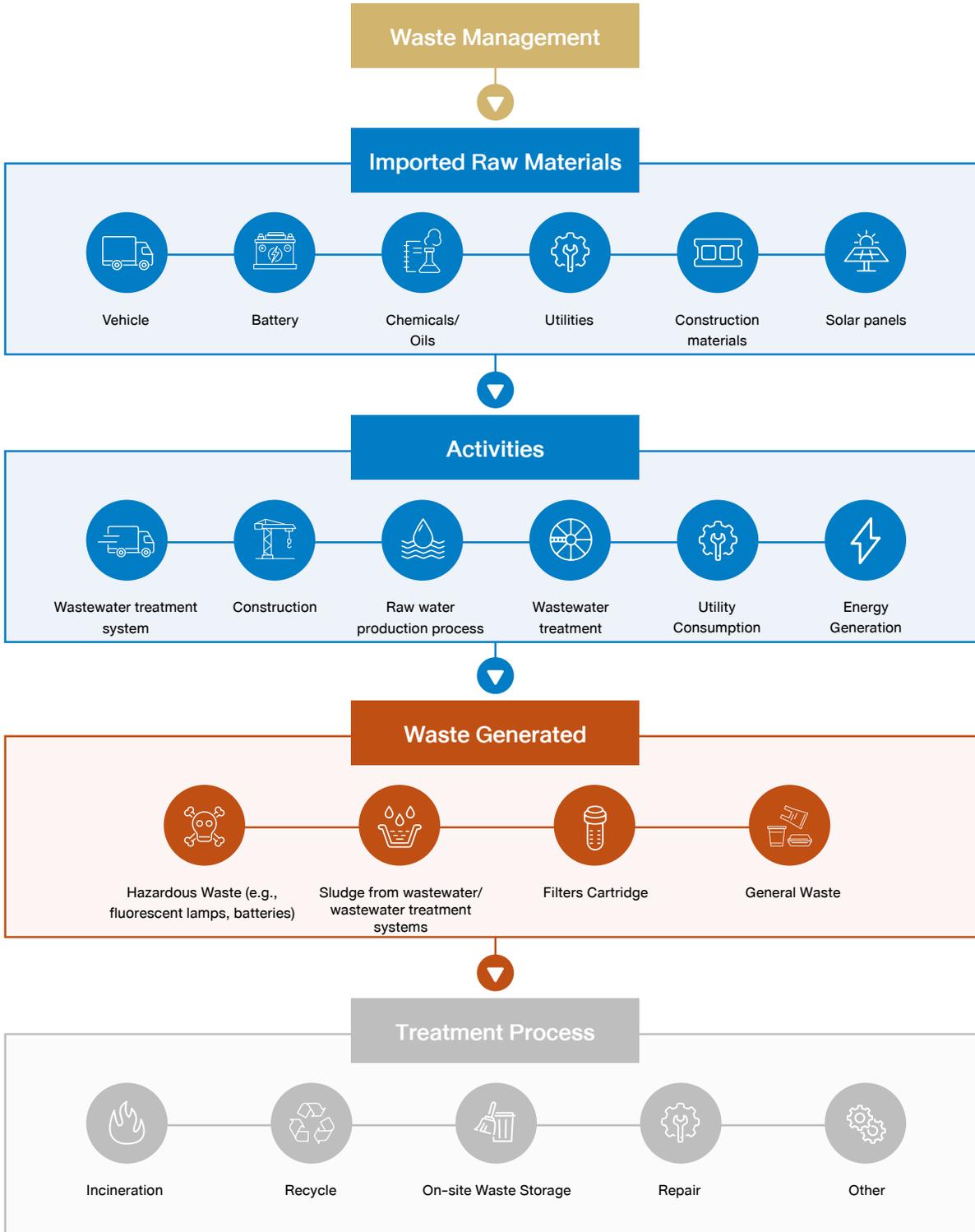
To further support proper waste and waste management within industrial facilities, WHAUP has assigned the Working Group for Waste Management to monitor and ensure that all factories located in WHAUP's industrial estates manage waste in accordance with applicable regulations and standards. The Working Group is also responsible for implementing preventative measures, conducting facility inspections, and enforcing the waste management policies approved by WHAUP's executive management.

The Working Group for Waste Management operates under the supervision of the Chief Operating Officer (COO), who reports directly to the Board of Directors. The Board is responsible for setting policy direction, developing strategic plans, monitoring performance, and evaluating the outcomes of waste management initiatives to ensure alignment with best practices and sustainability objectives.

Roles	Responsibilities
Chief Operating Officer	Responsible for overseeing WHAUP's waste management, including planning and developing strategies to enhance waste management efficiency, reduce waste generation, and promote the efficient use of resources. Also oversee the operations of the Working Group for Waste Management to ensure alignment with the organization's sustainability goals.
Board of Directors	Oversee and sets policy directions for WHAUP's waste management, with responsibilities including long-term strategic planning, monitoring waste management performance, evaluating the environmental impact of policies, and establishing continuous improvement pathways. These efforts ensure that waste management practices align with principles of good governance, transparency, and support the organization's sustainable growth.

3.2 RISK AND OPPORTUNITIES MANAGEMENT STRATEGY

The waste and residues generated from WHAUP’s activities consist of various types, with the majority being general municipal waste, sludge from industrial water production facilities and wastewater treatment systems operated by WHAUP, as well as hazardous waste from office buildings and machinery maintenance activities such as fluorescent lamps and oil-contaminated rags.



WHAUP places great importance on effective waste management to mitigate potential risks and create opportunities for sustainable business development.

Risks	Opportunities
<p>If WHAUP fails to manage waste and refuses generated from its activities and operations appropriately, it may result in environmental impacts such as pollution, energy consumption for waste disposal, and greenhouse gas emissions from waste treatment processes, which could negatively affect the climate. Additionally, improper waste management may affect surrounding communities in terms of public health and quality of life, leading to regulatory risks, stakeholder complaints, and reputational damage to the organization.</p>	<p>Effective waste management presents an opportunity to reduce resource and disposal costs, while increasing business value through the transformation of waste into new products. This approach helps minimize environmental and social impacts, supports WHAUP's sustainability goals, and creates value for stakeholders across the value chain. Moreover, adopting best practices in waste management enhances corporate credibility and opens up new business opportunities related to the circular economy and environmental innovation.</p>

WHAUP has established waste management planning as an integral part of the Environmental Impact Assessment (EIA) process for all new project developments to ensure that waste management processes are effectively implemented throughout the project lifecycle. Furthermore, WHAUP communicates this plan to customers within various industrial estates and oversees performance through reports received from these customers.

3.3 RISK MANAGEMENT
WASTE MANAGEMENT APPROACH

WHAUP has adopted WHA Group’s waste management approach as a core component of its business operations, setting shared goals and strategies aimed at achieving sustainable operations as follows:

- WHAUP has set a goal to operate its business under a fully circular economy (100% Circularity) by the year 2050 through implementation based on three key principles: Design & Resource, Green Products, and Operation Excellence.
- WHAUP has developed strategies aligned with the circular economy and zero waste goals for waste management as follows:

- o Integrate circular economy principles into business processes, starting from product design and material selection to maximize resource value.
- o Promote the use of renewable energy and recycled materials in construction and production processes to reduce waste and residuals.
- o Extend product lifespan through reuse, repair, value enhancement, and product refurbishment to restore like-new condition.
- o Encourage product leasing programs as an alternative to outright purchase.
- o Initiate and transform business models towards Products as a Service (PaaS) and Sharing Platform concepts.
- o Employ digital technologies to improve business process efficiency.



- o Research and develop innovations and new materials to extend the life of materials and products.
- o Collaborate with customers, partners, suppliers, and regulatory bodies throughout the product value chain to promote the circular economy.
- WHAUP aims to achieve zero waste disposal by landfill or incineration without energy recovery (recycle-free disposal) by the year 2029.

For the waste data collection and monitoring process, WHAUP relies on systematic recording of waste volumes and types generated during each production stage. Relevant employees periodically document this information and prepare reports used to monitor waste trends and to plan more effective waste management strategies.

BIO-CIRCULAR-GREEN ECONOMY (BCG)

WHAUP has continuously adopted the Bio-Circular-Green (BCG) Economy model as part of its business operations, focusing on the development of bioeconomy, circular economy, and green economy. This approach aims to maximize resource efficiency and optimize value throughout the product life cycle. It helps reduce waste generation and promotes the transformation of residual materials into new products, thereby not only minimizing environmental impacts but also enhancing the company's internal waste management standards.

By integrating the BCG principles into its operations, WHAUP effectively mitigates environmental impacts and proactively prevents potential negative consequences from business activities. These include improper waste disposal, mismanagement of hazardous waste that could affect nearby communities, and pollution of soil, water, and air. In addition, the BCG model supports responsible business practices that respect the rights of all stakeholders from industrial estate operators and WHAUP employees to surrounding communities. WHAUP's BCG strategy is not only a tool to reduce operational risks and environmental harm but also serves as a key driver in building long-term sustainability for both the organization and its broader business ecosystem.

WASTE MANAGEMENT ARISING FROM THE CONSTRUCTION PROCESSES OF WHAUP'S PROJECTS AND BUILDINGS

Although construction waste generated from WHAUP's projects and infrastructure development is considered indirect waste under the responsibility of the company's contractors, WHAUP has implemented a proactive and effective waste management plan. The company carefully selects business partners and contractors, ensuring that all parties choose construction materials with due consideration of their environmental and social impacts. Waste management has also been established as a mandatory requirement in all construction contracts.

In addition, WHAUP mandates 100% segregation of construction and operational waste across all WHA's industrial estates. Strategies and plans have been developed to monitor, control, and minimize construction and demolition waste in alignment with the company's zero-waste approach, starting from the design phase. For every project, WHAUP requires collaboration between project engineers and safety officers to jointly plan and design a waste management layout that aligns with the construction timeline. Key factors considered include waste volume, duration, material usage, construction site space (including temporary areas), and compliance with relevant regulations.

Throughout project implementation, safety officers are assigned to record and monitor all waste transported off-site, including tracking each waste category and inspecting the condition of waste handling and transport to ensure safety and compliance.

In addition, WHAUP requires contractors to manage construction waste and debris for all projects (100%). This includes providing adequate closed-container receptacles distributed throughout construction areas and assigning personnel responsible for systematically collecting and segregating construction waste from various activities, storing them orderly for potential sale or utilization according to the principles of Reduce, Reuse, Recycle (3R). Since construction processes and waste management are the responsibility of all

contractors, the benefits of resource conservation, recycling of construction materials, and revenue from various trading activities are shared among all contractors, amounting to 100%.

WHAUP has also designated that 100% of employees, workers, contractors, and subcontractors are responsible to follow the waste management procedures outlined to ensure that everyone involved in the business operations has knowledge and understanding of waste management principles and correct waste management techniques. WHAUP has organized efficient waste management training for employees, workers in industrial factories, and all contractors involved. For example, contractors receive training before commencing work. This training includes emphasizing various waste management requirements. Additionally, knowledge is imparted through various projects such as the Sort N' Save project and the WeCYCLE project. WHAUP also applies to the principle of separating waste from construction projects to facilitate reuse, recycling, and proper disposal. Most of the waste generated during construction is reused by converting it into leveling materials. Other waste generated by contractors is transported and disposed of by the contractors in accordance with policies. Furthermore, WHAUP purchased construction materials and conducted business operations from recycled sources and sold recycled materials, totaling approximately 36 tons in 2024, which helps reduce the volume of waste to be disposed of and promotes resource efficiency.

GOVERNANCE OF INDUSTRIAL FACTORIES TO PROPERLY MANAGE WASTE

Although WHAUP, as a utility and energy service provider in industrial estates, does not have direct authority over the waste management practices of factories within the estates, the company has established a joint working committee with WHA Group. This committee is tasked with overseeing and ensuring that industrial facilities manage their waste properly and in accordance with applicable regulations. The committee is also responsible for implementing preventive measures, conducting inspections and assessments of factories and waste treatment facilities,

and enforcing other waste management policies as approved by the executive committee.

Furthermore, WHAUP actively promotes the adoption of the 3Rs (Reduce, Reuse, Recycle) and the Circular Economy principles among industrial operators. WHAUP encourages environmental management practices through programs such as the “Green Industry” and “White Flag-Green Star” initiatives across all industrial estates under its management. In 2024, a total of 95 industrial facilities participated in these programs.

PROMOTING CUSTOMER AWARENESS ON INDUSTRIAL WASTE MANAGEMENT

In addition to having a dedicated task force to oversee and manage waste to ensure that industrial factories properly handle their waste, WHAUP has also communicated its waste management system to the factories within WHAUP's industrial estates and industrial zones. This communication takes place through meetings organized by the Safety Club, which represents the factories in the Eastern Seaboard Industrial Estate (Rayong) (ESIE), WHA Eastern Seaboard Industrial Estate 1 (WHA ESIE 1), WHA Eastern Seaboard Industrial Estate 2 (WHA ESIE 2), WHA Eastern Seaboard Industrial Estate 3 (WHA ESIE 3), WHA Eastern Seaboard Industrial Estate 4 (WHA ESIE 4), WHA Chonburi Industrial Estate 1 (WHA CIE 1), WHA Chonburi Industrial Estate 2 (WHA CIE 2), WHA Rayong Industrial Land (WHA RIL), WHA Saraburi Industrial Land (WHA SIL), and WHA Eastern Industrial Estate (Map Ta Phut) (WHA EIE).

The purpose is to promote awareness and encourage cooperation in adhering to waste management guidelines within the industrial estates. In 2024, the Safety Club organized a total of 39 meetings separated by industrial estate groups. The topics communicated included waste and waste reduction, methods of waste reuse, waste transportation, use of waste transport documentation as required by law, and implementation of the CCE project (Converting Waste to Energy).

3.4 METRICS AND TARGETS

1. WASTE MANAGEMENT TARGETS AND PERFORMANCE

WHAUP has established both short-term and long-term targets for waste management across all its industrial estates, aiming to enhance the efficiency of waste handling practices. In 2024, WHAUP set a target to reduce the proportion of waste disposed of through landfilling or incineration (without energy recovery) to 0% and successfully achieved this goal. As a result, WHAUP is now committed to maintaining a 0% rate of such waste disposal on an ongoing basis each year.

QUANTIFIED TARGET

Performance	2018	2019	2020	2021	2022	2023	2024	Target Year
The proportion of waste disposal through landfilling or incineration (without conversion into energy)	58.6%	89.93%	55.66%	25.46%	19.57%	0.02%	0.0%	Reduce the proportion of waste disposal through landfilling or incineration (without conversion into energy) to 0 by 2029

UNQUANTIFIED TARGET

WHAUP is committed to conducting its business in alignment with the principles of the Circular Economy, emphasizing waste reduction throughout operations and the efficient use of resources. The following targets were set, along with key achievements in 2024:

Target	Performance 2024
Safe and effective disposal of all hazardous waste	WHAUP successfully managed all hazardous waste safely and in compliance with applicable standards. No incidents of leakage or improper handling were reported.
Promotion of the Circular Economy	WHAUP integrated circular economy principles into its production and business operations, with increased use of recycled materials and a continuous reduction in the use of virgin resources.
Collaboration with business partners and communities	WHAUP launched collaborative waste management initiatives with business partners, such as the WeCycle project, and received strong support from local communities.

2. RESOURCE USE REDUCTION TARGETS AND PERFORMANCE

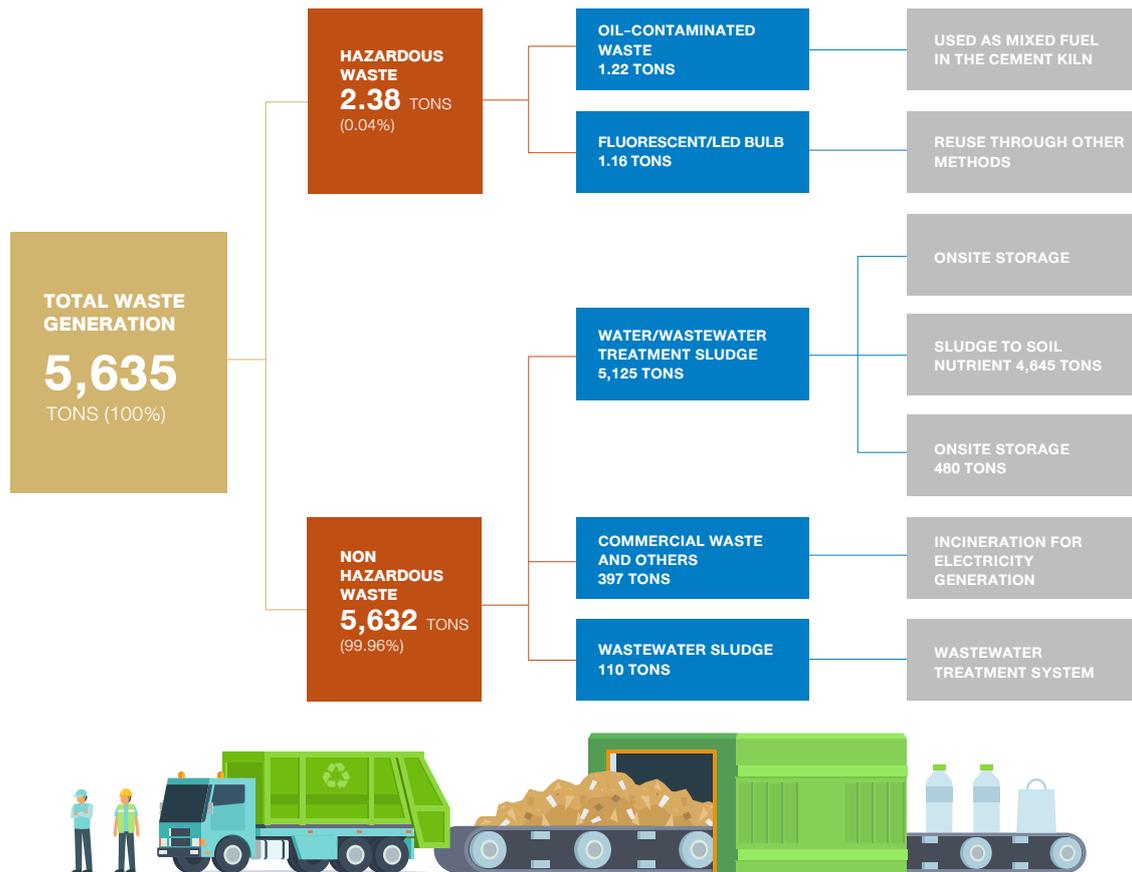
WHAUP is committed to conducting its business in accordance with the principles of the Circular Economy to ensure the efficient and sustainable use of resources. WHAUP aims to minimize resource consumption throughout its operations by implementing concrete measures and continuously improving resource efficiency. This commitment supports sustainable business practices and reduces environmental impact, with a target to achieve zero resource consumption by 2029.



UNQUANTIFIED TARGET

Target	Performance 2024
Use of technology to improve efficiency and reduce resource consumption in construction	In 2024, WHAUP applied digital technologies to assist in planning and designing projects for maximum efficiency, reducing unnecessary resource use.
Reduction of natural resource consumption	In 2024, WHAUP adopted environmentally friendly approaches in selecting materials and resources, such as using substitute materials that do not harm nature and reducing energy consumption during construction processes.

Amount of waste generated from operations



Performance in 2024 showed that the total amount of waste sent to landfill was reduced by 100% compared to 2023. This reduction is the result of various initiatives undertaken by WHAUP to manage waste efficiently, such as utilizing sludge from the wastewater treatment system as soil conditioner, reducing operational waste, reusing and recycling waste materials, and investing in technologies to find alternative waste disposal methods beyond landfilling and incineration. Other projects include supplying necessary resources to customers and communities, as well as engagement activities to raise awareness and promote the integration of sustainability principles into waste management processes and related systems.

WHAUP operates in accordance with established standards by properly segregating hazardous waste before outsourcing it to government-authorized agencies for hazardous waste management. Additionally, WHAUP monitors third-party waste disposal processes to ensure compliance with legal requirements and contractual conditions by reviewing certification documents, disposal reports, and adherence to environmental standards. This ensures that waste disposal is conducted correctly and aligns with WHAUP's sustainable development principles.

WASTE MANAGEMENT

Wastewater management is a critical component of industrial waste management systems, as improperly treated wastewater can adversely affect ecosystems, natural water sources, and the health of surrounding communities. However, with effective treatment and reuse approaches, organizations can transform wastewater from an environmental burden into a valuable resource.

WHAUP has adopted this concept in its wastewater management processes, focusing on minimizing negative impacts while maximizing positive benefits for both the industrial sector and local communities. WHAUP's water reclamation projects play a key role in reducing dependence on natural water sources, mitigating environmental risks, and providing industries with sustainable water supplies. A clear outcome of these initiatives is the reduction of wastewater discharged into the environment, leading to improved water quality in public water bodies and decreased risks of water pollution that could harm biodiversity and ecosystems especially in the Eastern Economic Corridor (EEC), a major industrial hub requiring substantial water resources.

From an economic perspective, employing advanced technologies in wastewater treatment and reuse such as converting wastewater into demineralized water and producing premium clarified water for industrial use enables industries to lower water procurement costs, reduce reliance on external water sources, and enhance their market competitiveness. Furthermore, these efforts help mitigate conflicts between industries and communities relying on the same water sources and reduce pollution that adversely affects communities near industrial facilities.

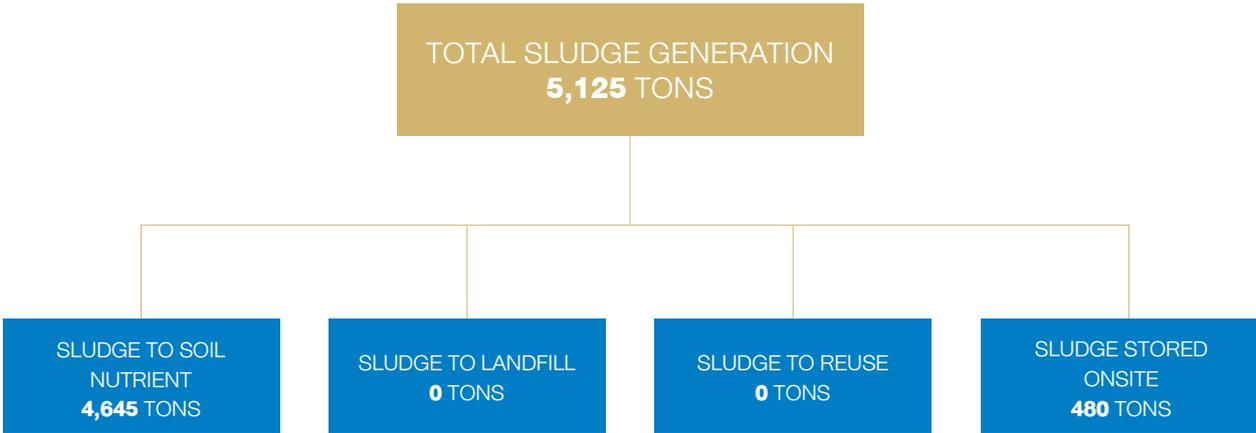
In 2024, WHAUP successfully reduced its consumption of natural water sources by 7.8 million cubic meters, representing 10% of the total water used that year. WHAUP has set a target to reduce natural water usage by approximately 21 million cubic meters annually by 2027, with a longer-term goal of 25 million cubic meters per year by 2029. These targets demonstrate WHAUP's strong capability in managing wastewater resources to maximize environmental, economic, and social benefits. Such wastewater management is not merely about reducing waste but about adding value to existing resources and promoting sustainable industrial development. This approach marks a significant step toward balancing economic growth with long-term environmental stewardship.



4. HIGHLIGHT PROJECTS

SLUDGE TO SOIL NUTRIENT

WHAUP has collaborated with WHA Group to implement a project for producing soil conditioners from sludge, aiming to reduce the volume of waste sent to landfills or incineration. As part of the process, soil quality is analyzed to ensure that the resulting product is free from heavy metals, organic compounds, and plant pathogens. WHAUP set a target to utilize 50% of total sludge for soil conditioner production, equivalent to 2,562.5 tons, as a means to eliminate landfill disposal by 2024. This target has been significantly surpassed, with 4,645 tons of sludge representing 90.60% of the total sludge generated-being successfully converted into soil conditioners. WHAUP remains committed to continuing this initiative to maintain zero landfill waste disposal year-on-year, aligning with its broader circular economy and waste reduction goals.



WASTE TO ENERGY

Waste-to-energy is a highly effective approach to enhancing waste management by converting all types of residual materials into valuable energy resources. This not only increases resource efficiency and value creation but also directly addresses concerns around energy demand. The initiative aligns with Thailand’s Alternative Energy Development Plan (AEDP 2015), which aims to increase the share of renewable and alternative energy to 30% of the total energy mix by 2036. In line with this national strategy, in 2019, WHAUP joined forces with two partners to invest in the Chonburi Clean Energy (CCE) project a waste-to-energy power plant located in the WHA Chonburi Industrial Estate 1 (WHA CIE 1).

The project is a milestone in sustainable industrial waste management, representing the first industrial waste-to-energy plant in Southeast Asia to meet European emission control standards. It has received recognition from both the Energy Regulatory



Commission and the Ministry of Industry for being the first of its kind in the Eastern Economic Corridor (EEC). The CCE plant exemplifies circular economy principles and serves as a model for sustainable industrial waste management. It has the capacity to convert up to 400 tons of industrial waste per day approximately 100,000 tons annually into refuse-derived fuel (RDF) and generates a maximum power output of 8.63 megawatts.

CCE Contribution in 2024:



CCE
has incinerated
120,913
tons waste

CCE
has generated
54,823
MWh
to the PEA

CCE
has saved around
36,000
tons CO_2

**Sustainable
Electricity**
for around
30,457
homes

Since 2020, WHAUP and WHA Group have entered into a long-term agreement with Waste Management Siam Co., Ltd., a specialized waste transportation and disposal service provider, to supply waste for renewable energy generation at the Chonburi Clean Energy (CCE) project. Under this agreement, WHAUP has consistently sent waste to the CCE facility annually for conversion into renewable electricity. In 2024 alone, a total of 1,106 tons of waste was delivered to the facility and successfully converted into 588 megawatt-hours (MWh) of electricity. Cumulatively, from 2020 to 2024, WHAUP diverted approximately 4,718 tons of waste from landfilling and incineration, generating a total of 3,408 MWh of renewable electricity. This initiative reinforces WHAUP's commitment to circular economy practices and sustainable energy solutions.





PAPERLESS TRANSFORMATION

WHAUP has integrated digital technologies as a core component of its business operations, including transitioning communication channels, data storage, and meetings to online platforms for improved accessibility and efficiency. One key initiative is the implementation of the “E-Paperless” project across all business units. This initiative encourages employees to adopt digital tools and devices to enhance work performance under a paperless work culture. As part of this initiative, WHAUP has provided tablets to employees, enabling them to conveniently access and present meeting materials, reports, inspection forms, and meeting records without the need for printed documents. In 2024, the project contributed to a paper usage reduction of approximately 2% compared to the previous year, supporting both operational efficiency and environmental sustainability.

HAZARDOUS CHEMICAL CONTAINER REDUCTION

WHAUP is committed to reducing hazardous waste generated from its utilities and energy operations. One of the key initiatives involves shifting from traditional chemical packaging to using loading tankers for chemical deliveries used in water supply and wastewater treatment systems. This change has helped reduce approximately 2 tons of packaging waste annually, which would otherwise require landfill disposal. However, certain chemicals such as 20% Poly Aluminium Chloride (PAC) and liquid chlorine still require packaging for safe transport and storage. To ensure these packaging materials do not adversely impact the environment, WHAUP has entered into agreements with suppliers requiring them to take responsibility for the reuse or appropriate disposal of used containers, in accordance with sustainable waste management principles.

SORT N’ SAVE PROJECT

Since 2019, WHAUP has implemented the Sort N’ Save initiative as part of the broader WHA Innovation Leader program. This initiative aims to raise environmental awareness among employees and encourage innovative business practices aligned with the principles of the circular economy. To ensure the campaign is impactful and widely accessible, WHAUP has organized various activities and communicated key messages through multiple channels such as desktop wallpapers, LINE application messages, internal emails, and monthly newsletters. The initiative is designed to inspire behavioral change among employees and underscore the importance of recycling and waste reduction as part of everyday operations.

REDUCE DEPENDENCY ON PLASTICS

While single-use plastics offer convenience and ease of use, they pose a serious threat to ecosystems if not managed properly. Once discarded, these plastics become persistent waste that is difficult to decompose, causing long-lasting environmental damage, including impacts on climate change and biodiversity.

To address this issue, WHAUP has continuously worked to reduce the consumption and disposal of single-use plastics since 2020. In collaboration with WHA Group, WHAUP eliminated the provision of bottled drinking water for external visitors and replaced it with paper-based packaging. This initiative alone helped WHAUP avoid more than 68,940 plastic bottles in 2024. Overall, WHAUP’s efforts to reduce plastic usage have resulted in a total reduction of approximately 0.7 tons of plastic waste.



WECYCLE PROJECT



WHAUP places great importance on efficient resource and waste management through participation in various projects and collaborations at both local and global levels aimed at reducing resource consumption and environmental impact.

WHAUP, in collaboration with WHA Group, has participated in the WeCYCLE project a multi-stakeholder initiative involving WHA Group, the Industrial Estate Authority of Thailand, PTT Global Chemical Public Company Limited, SCG Packaging Public Company Limited, and BSGF Co., Ltd. (a joint venture between Bangchak Corporation Public Company Limited, BBGI Public Company Limited, and Thanachok Oil Light Co., Ltd.). The WeCYCLE project promotes the principles of the circular economy by encouraging waste segregation and recycling within the operational areas of WHAUP

and participating members. The initiative aims to reduce resource consumption, lower greenhouse gas emissions, and mitigate global warming. Ultimately, it supports the efficient and sustainable use of resources across the value chain.

The WeCYCLE project was launched in 2022 and has since grown to include 116 companies and organizations. These members consist of WHA Group companies, WHA Group employees, customers, contractors, local communities, schools, and local government agencies. They all participate as part of a shared commitment to sustainable environmental care by donating plastic waste, paper, and used cooking oil for recycling and upcycling processes. Local community enterprises manage the sorting of waste to ensure used plastic bottles are sent to globally certified recycling plants through the “YOUTURN” transportation system operated by PTT Global Chemical Public Company Limited. Used paper is sent to world-class recycling facilities managed by SCG Packaging Public Company Limited, and used cooking oil is transported to recycling plants under the management of BSGF Company Limited, a subsidiary of Bangchak Corporation Public Company Limited. These materials are reused, including the recycling of used cooking oil into Sustainable Aviation Fuel (SAF), an environmentally friendly alternative energy source.



The WeCYCLE project not only helps reduce waste volume and greenhouse gas emissions major contributors to current global warming but also plays a key role in generating income for local communities through the production of upcycled products made from dried water hyacinth fibers.

These fibers are sourced from WHA’s industrial estate wastewater treatment project under the WHA Clean Water for Planet initiative and are processed by the Ban Chak Mahad Community Enterprise Group in Rayong Province. This effort not only adds value to waste materials but also strengthens the community’s capacity and provides sustainable income opportunities for the local residents.



Since the project’s inception in 2022 until now, more than 116 companies and organizations have joined, donating over 58 tons of used plastic bottles, 68 tons of used paper, and 1.10 tons of used oil, all of which have been processed through recycling and upcycling. This reflects the success in raising environmental awareness and active participation across all sectors, reinforcing WHA Group’s commitment to driving business alongside sustainable social and environmental development under the concept of “WHA : WE SHAPE THE FUTURE.”

Additionally, WHAUP supports the Waste Bank project organized by the Pluak Daeng Municipality in Rayong Province. WHAUP has provided funding to improve the facility and develop the waste bank project to encourage local government organizations to efficiently manage and dispose of solid waste. The project promotes the circular economy concept in waste management through the 3Rs principle: Reduce, Reuse, and Recycle. It also campaigns to raise public awareness and understanding while fostering community participation in waste reduction and segregation of recyclable materials, which can then be sold to the waste bank, generating income for the community.



IN 2024, WHAUP HAS IMPLEMENTED THREE WECYCLE PROJECTS, INCLUDING:

1. WeCYCLE “Used plastic bottles” Project

The WeCYCLE : used plastic bottles project is a pilot initiative by WHA Group and its subsidiaries, in collaboration with the Industrial Estate Authority of Thailand and PTT Global Chemical Public Company Limited. The project invites customers, contractors, communities, schools, local government agencies, as well as company employees, to donate used plastic bottles. Collection points and drop-off locations, supported by “YOUTURN”, are set up inside WHA Tower and within WHA’s industrial estates.

The collected used plastic bottles in the WeCYCLE project are processed through recycling and upcycling into plastic fibers, which are then woven together with water hyacinth fibers from WHA’s industrial estate water treatment project, WHA Clean Water for Planet. These are made into valuable and environmentally friendly upcycled products such as pillowcases for hospital patients, laptop bags, fabric bags, and school bags. These products are then distributed to communities to generate sustainable benefits and value.

From 2022 to 2024, the WeCYCLE : used plastic bottles project has helped reduce plastic waste sent to landfill by up to 58 tons, equivalent to reducing 59 tons of carbon dioxide emissions.



2. WeCYCLE: “Used Paper” Project

The WeCYCLE: used paper, project is a collaboration between WHA Group, the Industrial Estate Authority of Thailand, and SCG Packaging Public Company Limited. This project collects used paper donations to be recycled into products that promote learning skills, such as bookshelves, which are then given to students in schools around WHA’s industrial estates. Since the project started in 2023 until now, it has helped reduce paper waste by up to 68 tons, which is equivalent to reducing carbon dioxide emissions by 198 tons of carbon dioxide emissions.



3. WeCYCLE: “Used Cooking Oil” Project

Building on the ongoing success of recycling plastic and paper waste, WHAUP expanded its recycling scope to include used cooking oil through the launch of the “WeCYCLE :Used Cooking Oil” project in 2024. This initiative is in collaboration with the Industrial Estate Authority of Thailand and BSGF Company Limited, aiming to support sustainable resource management and reduce environmental impacts.

The project focuses on collecting used cooking oil from WeCYCLE members to be recycled into Sustainable Aviation Fuel (SAF), a clean alternative energy that helps reduce greenhouse gas emissions and is environmentally friendly.

In 2024, the project collected 1.1 tons of used cooking oil, which is equivalent to reducing greenhouse gas emissions by 0.36 tons of carbon dioxide emissions. This success demonstrates WHAUP’s concrete capability to drive a Circular Economy by transforming waste into valuable and sustainable clean energy.



USE OF LIFE CYCLE ANALYSIS (LCA) IN CONSTRUCTION

Since 2024, WHAUP has applied Life Cycle Analysis (LCA) in the design and construction of infrastructure within the industrial estates. This approach assesses the environmental impact of resource use at each stage of construction, from selecting building materials, transportation, and construction processes, to maintenance and waste management after construction completion. The application of LCA in structural design enables the selection of materials and construction methods that minimize environmental impact and optimize the efficient use of natural resources.

LIFE CYCLE ASSESSMENT (LCA) OF WATER PRODUCTION PROCESS

WHAUP has committed to conducting business alongside sustainable development, prioritizing the reduction of environmental impacts. They have adopted Life Cycle Assessment (LCA) for their production processes to thoroughly analyze environmental impacts throughout the entire life cycle, from raw material acquisition, production, transportation, and usage, to waste management. Within their operational processes, the group of companies plans to elevate their environmental management further by studying and developing a Carbon Footprint for their products. This will help assess the amount of greenhouse gas emissions released from the production of each product.

5. IMPACTS ON STAKEHOLDERS AND ENVIRONMENT

WHAUP has adopted the BCG (Bio-Circular-Green Economy) model as a core business approach, focusing on maximizing resource efficiency and minimizing waste generation from the outset covering procurement, transportation, material selection, reuse, and the transformation of waste into new products. Through ongoing waste management initiatives, WHAUP successfully reduced waste by 454 tons, while also achieving cost savings and resource efficiency in operations and construction totaling approximately THB 1 million.

Effective waste management has generated multiple environmental and social benefits, notably through the diversion of waste from landfilling or incineration. This has been achieved by applying circular solutions such as converting sludge into soil conditioners, using industrial waste as alternative fuel, and repurposing leftover concrete into paving blocks. These practices help reduce pollution, decrease resource consumption, lower material and waste handling costs, and support circular economy objectives.

Furthermore, WHAUP places strong emphasis on the use of environmentally friendly construction materials such as precast and recycled materials. The company also promotes the development of green buildings aligned with international standards, enhancing energy efficiency, reducing construction waste, and cutting greenhouse gas emissions. Collectively, these efforts not only mitigate environmental impact but also deliver shared value to stakeholders including local communities, business partners, and customers—by supporting clean energy use, reducing costs, and reinforcing WHAUP’s image as a socially and environmentally responsible organization.

6. NEXT STEP

WHAUP remains committed to maintaining and enhancing its effective waste management practices, with a focus on developing more advanced and integrated solutions in the future. The company emphasizes a holistic approach to supply chain management starting from procurement and production to responsible waste disposal to ensure optimal resource utilization, minimize environmental impact, and promote a circular economy. WHAUP has set an ongoing target to maintain zero waste to landfill or incineration without energy recovery each year. This is achieved by continuing to repurpose 100% of construction-related sludge into soil conditioners instead of landfilling.

In addition, WHAUP aims to reduce paper consumption by 3% by 2025. The company has also set goals for expanding the WeCYCLE initiative in 2025, with a focus on reducing plastic, paper, and used cooking oil waste through recycling processes. These efforts aim to reduce CO₂ emissions by 20%. WHAUP also plans to scale up the initiative to include customers, contractors, and surrounding communities targeting a 10% increase in environmental awareness and stakeholder engagement.



1. GLOBAL TREND

Air emissions from business activities, especially within the industrial and power sectors, continue to widely impact the environment and public health, particularly for communities situated near operational areas. If not properly and promptly addressed, these impacts can diminish long-term quality of life and hinder the sustainable development of the economic system.

In response to evolving global challenges, businesses are adopting advanced technologies to effectively manage air emissions. Strategies include installing high-efficiency emission control systems, transitioning to renewable energy in place of fossil fuels, and implementing smart systems for real-time air quality monitoring, which facilitate early detection and targeted intervention. Additionally, fostering engagement among local communities and internal staff has become essential in long-term air pollution management. Initiatives such as awareness campaigns, educational programs on pollution mitigation, green space rehabilitation projects, and collaboration with government agencies in shaping environmental policies are increasingly being emphasized. These proactive efforts enable businesses to enhance their

social and environmental accountability and align with the sustainable development goals that are now a key expectation from stakeholders across all levels.

2. OUR POSITION

WHAUP places strong emphasis on managing air emissions that may result from its utilities and power operations. Inadequate control of such emissions can lead to long-term impacts on the environment, public health, and sustainable development. Therefore, WHAUP is dedicated to adhering to international standards to minimize and prevent these impacts. Measures include the use of advanced technologies such as high-precision air quality monitoring systems and the replacement of fossil fuels with clean energy sources to lower greenhouse gas emissions. Additionally, WHAUP promotes the expansion of green areas within and around industrial zones to help mitigate air pollution and enhance the quality of life for nearby communities.

In practice, WHAUP has consistently and seriously committed to the sustainable use of clean energy by integrating green innovations and technologies into our production processes. This not only reduces air



pollution but also fosters sustainable growth across all dimensions: environment, social, and governance (ESG). Furthermore, WHAUP, under the WHA Group, has supported and participated with Saraburi Province through the Federation of Thai Industries, in developing a clean energy transition strategy. This initiative is part of the “Saraburi Sandbox” project, which focuses on researching the production and use of clean energy in Saraburi, aiming to make it Thailand’s first low-carbon city model. WHAUP actively cooperates in encouraging industrial factories to join the Green Industry project, emphasizing the adoption of new innovations and technologies to reduce fossil fuel consumption and transition towards increased reliance on clean energy.

WHAUP has also established comprehensive pollution control measures that cover every stage of production of utilities and power service, from design to field operations. Particular attention is given to dust control during construction of infrastructure, such as installation of power and utility pipes which might impact surrounding communities and environment. Measures include spraying water to suppress dust, washing vehicle wheels before leaving the site, and limiting soil exposure. In addition, WHAUP has assigned area environmental specialists to continuously

monitor and inspect pollution sources to ensure that our operations comply with the standards set by the Ministry of Natural Resources and Environment as well as the Ministry of Industry.

With the commitment to developing environmentally friendly business, WHAUP has improved our air emission management policies and measures. WHAUP also discusses and coordinates with relevant agencies at both the local and national levels to enhance the efficiency of environmental management systems to tangibly reduce environmental impacts. WHAUP firmly believes that these efforts will help achieve a balance between the development of utilities and power infrastructure, communities, and the environment to coexist in harmony and sustainability in the long run.

3. MANAGEMENT APPROACH

3.1 GOVERNANCE STRUCTURE

To manage air pollution, WHAUP has established a Corporate Governance and Sustainable Development Committee, overseen by the Board of Directors. This committee plays a crucial role in setting strategies and directions for reducing air pollution from business operations. The committee is responsible for closely monitoring and evaluating the progress of these efforts to ensure that pollution reduction targets are effectively met and are practically achievable according to international standards. Furthermore, the Corporate Governance and Sustainable Development Committee is essential in shaping policies and practices for air pollution management that align with the WHA Group’s sustainable development goals. This includes focusing on preventing and mitigating potential impacts from business activities, promoting the use of emission-reducing technologies, and proactively improving air quality in surrounding areas.

The Corporate Governance and Sustainable Development Committee has tasked a designated working team with the primary role of formulating action plans that support WHAUP’s strategic direction. This responsibility involves implementing air pollution control measures in production activities, leveraging advanced technologies for air quality monitoring, and evaluating environmental impacts from operations.

Additionally, the working team is responsible for regularly reporting progress and results to the Corporate Governance and Sustainable Development Committee, ensuring timely oversight, assessment, and adjustment of the plans. The team also recommends new approaches to further reduce air emissions and improve management effectiveness in line with both domestic and international environmental standards. Moreover, the team actively engages with external organizations and local communities to build lasting partnerships aimed at preventing and mitigating air pollution.

3.2 RISK AND OPPORTUNITIES MANAGEMENT STRATEGY

Air emissions is a critical challenge that can affect WHAUP's utility and power operations on legal risks, corporate reputation, and operational expenditures. Inadequate pollution control could expose WHAUP to legal sanctions and lead to a loss of trust from customers, investors, and business partners. This ultimately threaten WHAUP's long-term competitiveness. Therefore, effective air emission management requires substantial investment in advanced pollution control technologies, along with ongoing environmental monitoring and impact evaluations. This approach aims to ensure that our operations meet established standards and minimize adverse impacts on all stakeholder groups.

Air emissions have far-reaching implications for various stakeholders. Surrounding communities may face health risks due to exposure to air pollution from construction or power production projects, resulting in respiratory illnesses and lower quality of life. Employees working in risk areas may also develop chronic health conditions, negatively impacting their productivity. Additionally, customers and business partners with strong environmental values may question our commitment if air pollution is not effectively addressed, leading to reduced business opportunities and collaborations.

For these reasons, WHAUP prioritizes a systematic, transparent, and responsible approach to air emissions management. This builds stakeholder confidence and

supports the sustainable long-term growth of the utilities and power businesses.

AIR POLLUTION IMPACT ASSESSMENT

WHAUP prioritizes assessing the costs associated with the impacts of air pollution from our business operations, including fees and taxes related to environmental compliance. In 2024, WHAUP evaluated that proactive implementation and investment in advanced technologies remain crucial strategies for mitigating such impacts. This approach enables us to operate sustainably while simultaneously conserve the environment. As part of these efforts, WHAUP and WHA Group has allocated funding for the research and development of technologies designed to reduce air emissions. This includes investments in innovations that improve energy efficiency, which in turn directly helps lower air pollution. More efficient energy usage reduces the need for fuel combustion, decreasing greenhouse gases and air emissions such as sulfur dioxide (SO₂) and nitrogen oxides (NO₂), which are major contributors to fine particulate matter (PM_{2.5}) and other forms of air pollution. For instance, WHAUP engaged energy consultants to assess and provide recommendations for energy usage at four industrial estates: Eastern Seaboard Industrial Estate (Rayong) (ESIE), WHA Chonburi Industrial Estate 1 (WHA CIE 1), WHA Eastern Industrial Estate (Map Ta Phut) (WHA EIE), and WHA Eastern Seaboard Industrial Estate 4 (WHA ESIE 4) with a total investment exceeding 850,000 Baht. These initiatives are intended to strengthen WHAUP's ability to effectively manage environmental impacts, mitigate corporate risks, and maintain a responsible balance between economic development and obligations to stakeholders and surrounding communities.



3.3 RISK MANAGEMENT

WHAUP recognizes the significance of mitigating environmental impacts, especially concerning air pollution, a critical factor affecting the quality of life for surrounding communities and the long-term sustainability of ecosystems. To address this issue, WHAUP has established guidelines for managing air emissions across all processes in our utilities and power businesses. Emphasis is placed on major sources of pollution, such as power plants and wastewater treatment plants. These operations aim to systematically control and reduce emissions through measures consistent with laws and international standards. Concurrently, we promote the adoption of clean technologies and environmentally friendly innovations in all operational stages. This is to maintain a balance between business growth and environmental stewardship, while creating shared value with society sustainably.

WHAUP focuses on monitoring air quality in the atmosphere by measuring Total Suspended Particulates (TSP), particulate matter not exceeding 10 micrometers in diameter (PM10), particulate matter not exceeding 2.5 micrometers in diameter (PM2.5), Nitrogen Dioxide (NO₂), and Sulfur Dioxide (SO₂) both within the industrial estate areas and within a 5 kilometer radius of the industrial estate community areas, at least twice a year. The air quality monitoring results show that 100% of WHAUP's operational areas meet the required standards, reflecting our strong commitment to effective environmental management.

In addition, WHAUP has installed Air Quality Monitoring Stations (AQMS) to continuously and automatically track air quality and meteorological data within industrial estate areas. These stations transmit real-time data to the Environmental Monitoring and Control Center (EMCC) and WHA Tower via the Unified Operation Center (UOC) system. The collected air quality data is submitted twice annually to relevant government authorities, including the Ministry of Natural Resources and Environment, the Industrial Estate Authority of Thailand, the Provincial Industry Office, and the Office of Natural Resources and Environmental Policy and Planning, as part of the Environmental Impact Assessment (EIA) Monitoring report. In 2024, WHAUP successfully met our EIA targets, with all monitored air quality parameters conforming to the required standards.

SUPERVISION AND PROMOTION OF EMISSION REDUCTION FROM INDUSTRIAL FACTORIES

As WHAUP provides utilities and power services for customers within WHA's industrial estates, WHAUP and WHA Group have implemented measures to regulate emissions from industrial factories within the industrial estates to ensure compliance with air emission standards for stationary sources established by the Ministry of Industry and the Industrial Estate Authority of Thailand (IEAT), as well as with the allocated emission levels set forth in each industrial estate's Environmental Impact Assessment (EIA) mitigation measures. If any factory exceeds the permitted emission levels, we will issue a notification requiring the facility to improve its pollution control systems to



meet the required standards and will report the matter to the IEAT for further oversight. Should the facility fail to control its emissions, WHAUP and WHA Group, in coordination with the IEAT, will enforce corrective actions, which may include suspending operations or revoking the plant’s license. Furthermore, we have set internal benchmarks requiring business operations and factories in the industrial estates to maintain air emissions at levels below 20% of the legal emission intensity limits per unit area. Results indicate that 100% of factories within WHA’s industrial estates, which are WHAUP’s customers, have complied with these standards.

In line with the eco-industrial estate model, WHAUP supported WHA Group in designing and managing environmental aspects of the industrial estates by emphasizing responsible resource and energy use, along with environmentally friendly production practices. Additionally, we collect data and encourage the reduction of greenhouse gas emissions to support environmentally responsible operations among our customers, who are tenants in WHA Group’s warehouses and industrial facilities.



MANAGEMENT OF AIR EMISSIONS FROM CONSTRUCTION PROJECTS OF WHAUP

WHAUP adheres to air pollution control measures for construction projects, particularly concerning dust particles. Efforts to minimize the impact of dust from land grading activities include limiting the exposure of soil surfaces, conducting water spraying at construction sites at least twice daily to suppress dust from dispersing into the air, and adjusting the frequency of spraying based on prevailing weather conditions. Additionally, trucks are required to have their tires washed before exiting the site.

ENERGY MANAGEMENT TO REDUCE AIR EMISSIONS

WHAUP, in collaboration with WHA Group, has implemented the use of renewable energy in various activities, such as solar power. We have also initiated energy efficiency projects by employing clean and energy-saving technologies, such as Solar Street Light, LED lighting in office and electrical control buildings, including replacing electrical equipment to better suit their usage by replacing air conditioners with four-way cassette types to better fit the building layout.

WHAUP also manages to reduce and optimize energy consumption in accordance with environmental standard system objectives and targets, as well as WHA Group’s Operation Excellence Policy. In 2024, WHAUP reduced energy consumption by approximately 862,837 kWh per year, equivalent to a reduction in carbon dioxide emissions of about 430,556 kilograms of CO₂. (More information on renewable energy use can be found under the Energy Management section.)

3.4 METRICS AND TARGETS

Target	2024 Performance	2024 Target	Long-term Target
Reduce emissions from NO ₂ and SO ₂ from WHA Group’s direct business operations to 0 tons	0 tons	0 tons	0 tons in every year

WHAUP also set targets to enhance processes or approaches to reduce air emissions, as follows:

Target	2024 Indicators
Utilizing clean energy to reduce air emissions	<ul style="list-style-type: none"> • Use of electric vehicles as company fleet • Use of Solar Street Lights
Developing roads and infrastructure within industrial estates to reduce dust	<ul style="list-style-type: none"> • Road paving with materials that minimize dust dispersion

4. HIGHLIGHT PROJECTS

CLEAN TECHNOLOGY TO REDUCE AIR EMISSIONS

WHAUP is committed to advancing business development through the adoption of clean technologies aimed at reducing air emissions. WHAUP, in collaboration with WHA Group, have implemented concrete initiatives to decrease emissions and raise environmental standards within the utilities and power sector, including:

- Deploying electric vehicles (EVs) as part of the company fleet to cut down on fossil fuel use and lower greenhouse gas emissions
- Installing solar rooftop systems across WHAUP's operational areas within WHA's industrial estates to lessen dependence on traditional electricity sources, which are predominantly fossil-fuel based
- Developing the Hydro Micro Turbine Generator (HydroXS) project to produce hydroelectric power
- Supporting the implementation of automated air circulation control sensors in office buildings
- Providing Solar Street Lights for WHA's industrial estates to reduce electricity usage from fossil-based energy sources
- Supporting air quality monitoring initiatives within industrial zones

TRIPARTITE MEETINGS TO MONITOR AND INSPECT THE AIR QUALITY OF FACTORIES WITHIN INDUSTRIAL ESTATES

WHAUP, together with WHA Group, has formed Tripartite Committees, also known as Environmental Impact Assessment (EIA) Committees, comprising representatives from WHAUP, WHA Group, government agencies, and local communities. These committees collaborate to monitor compliance with the environmental measures outlined in the EIA reports. They also serve as a communication channel, conveying information about WHAUP's business activities and acting as a point of contact for stakeholder concerns, including environmental complaints and air quality issues. Additionally, the committees evaluate projects aimed at improving community well-being and enhancing the surrounding environment. Air quality has been identified during committee meetings as a key focus area for

ongoing monitoring to ensure standards within the industrial estates are consistently met and improved. In 2024, ten Tripartite Committees were established, one for each industrial estate, with meetings held at least twice annually, with a total of 212 attendees. The meeting results are documented in the EIA reports for submission to relevant government agencies and local administrative bodies.

PM 2.5 MONITORING PROJECT FOR COMMUNITIES

WHAUP recognizes the importance of air quality and its impact on the health of communities surrounding our operation sites within WHA's industrial estates and prioritizes comprehensive environmental management. As a result, WHAUP collaborated with WHA Group to implement the PM 2.5 Monitoring Project for Communities, which serves as an additional measure beyond the requirements outlined in the Environmental Impact Assessment (EIA). Under this initiative, we conduct annual measurements of PM 2.5 levels across all 11 of WHA's industrial estates to monitor air quality and track PM level trends that may impact the environment and public health. Following the monitoring process, we report the results to the Tripartite Committees, comprising representatives from the public sector, private sector, and local communities, to ensure transparency and inclusive access to information. This project reflects our commitment to socially responsible business operations, while promoting environmentally friendly industrial development and fostering confidence among communities surrounding WHA's industrial estates.



5. IMPACTS ON STAKEHOLDERS AND ENVIRONMENT

WHAUP continually manages air pollution to mitigate the impacts of our utilities and power businesses and to promote positive environmental and social outcomes. One example is the promotion of clean technologies and alternative energy in production and service processes. This limits reliance on fossil fuels, reduces the use of natural resources, and tangibly decreases air pollutant emissions. Additionally, air quality monitoring stations have been installed in operational areas to promptly track, inspect, and control air quality, thereby reducing impacts on the environment and stakeholder health.

WHAUP and WHA Group have disclosed real-time air quality data through online channels, allowing customers, communities, users, and other stakeholders convenient and transparent access to information. This strengthens confidence in WHAUP's environmental responsibility and reinforces our commitment to sustainable business operations in all dimensions.

6. NEXT STEP

WHAUP recognizes the importance of air emissions management as a crucial factor in achieving environmental sustainability and enhancing the quality of life for surrounding communities. This is part of our commitment to operating the utilities and power businesses with environmental responsibility and in alignment with long-term sustainable development goals. WHAUP has collaborated with WHA Group to continuously expand projects and develop new approaches, primarily focusing on WHA's industrial estates. This involves applying modern technology and clean energy to reduce air pollutant emissions and improve environmental management efficiency.

Furthermore, WHAUP continues to implement circular economy projects together with providing utilities and power services. This aims to reduce greenhouse gas emissions and the wasteful use of natural resources, support the development of environmentally friendly industries, and create tangible positive impacts on surrounding communities. We remain dedicated to continuously developing new measures and plans, fostering collaboration with government agencies, the private sector, and communities to drive balanced growth across the Environmental, Social, and Governance (ESG) in the long term.





1. GLOBAL TREND

Environmental issues and climate change remain among the most significant global concerns today. The impacts of climate change have become increasingly severe in multiple dimensions, such as more frequent and intense natural disasters, including heatwaves, floods, droughts, and storms. All these affect ecosystems, economies, communities, and human quality of life, particularly vulnerable groups who face challenges in adapting to rapid changes.

In 2024, the implementation of the goals of the Paris Agreement and the United Nations Framework Convention on Climate Change (UNFCCC) continues to be emphasized. A key objective is to limit the global temperature increase to no more than 1.5 degrees Celsius above pre-industrial levels to avoid potential impacts on the planet and ecosystems. COP29, to be held in late 2024 in Baku, Azerbaijan, is a crucial platform for supporting global carbon reduction. It prioritizes the development and promotion of renewable energy sources such as solar cells, wind power, and biomass, as well as the development of energy storage systems to enhance energy security and reduce reliance on fossil fuels. Furthermore, the development of new technologies, such as hydrogen energy and more efficient batteries and energy storage systems, will be another important trend driven in the coming year to help reduce greenhouse gas emissions and support the transition to a low-carbon society. Additionally,

the development of Carbon Capture and Storage (CCS) technology, which can capture carbon from emissions and store it in underground reservoirs, will become another vital tool in achieving Net Zero targets.

Climate Finance will play a crucial role in supporting projects related to green infrastructure, sustainable community development, and enhancing disaster resilience. Particularly at present, there is increasing investment in sustainable community development projects and environmentally friendly infrastructure.

Concurrently, COP29 also emphasizes reducing the unequal impacts on low-income communities that face difficulties in adaptation. Governments and organizations have accelerated their Net Zero Emission targets while pushing for new innovations, such as the use of low carbon building materials and promoting sustainable and environmentally friendly food production. Regarding trends in greenhouse gas emission management, more stringent measures will be observed, including the use of tools that can track and assess greenhouse gas emissions at every stage of the supply chain, encouraging businesses and organizations to adopt technologies that help reduce greenhouse gas emissions, and implementing strategic measures to achieve Net Zero faster. All of these reflect the global effort to collaborate in combating climate change and building a sustainable future for everyone.

2. OUR POSITION

WHAUP deeply recognizes that climate change in 2024 is not merely an environmental issue but is intertwined with all sectors, including economic, political, and social aspects. International and cross-sectoral cooperation will be key to solving the problem and achieving long-term sustainability goals. We continue to advance our sustainability operations to address the climate crisis in 2024. We are focused on adhering to the targets under the Paris Agreement and reducing greenhouse gas emissions in line with the Net Zero target by 2050. Operations this year have seen progress in several areas, including the expansion of renewable energy projects, such as the installation of solar cell systems combined with smart energy management systems and improving the efficiency of solar batteries. This also includes the initiation of floating solar projects in key industrial estates, with a target of signing accumulated power purchase agreements (PPAs) from renewable energy (on an equity basis) totaling 657 MW by 2025. Additionally, WHAUP has initiated advanced renewable energy projects, such as large-scale solar battery storage and the installation of solar cell systems integrated with Smart Energy Management Systems. These initiatives enhance energy management efficiency and reduce environmental impact. Last year, WHAUP achieved our goal of signing accumulated PPAs from renewable energy (on an equity basis) totaling 437 MW, which is expected to reduce greenhouse gas emissions by 61,808 tCO₂e per year.

Over the past year, WHAUP and WHA Group have promoted various measures and expanded controls to reduce greenhouse gas emissions. This expansion includes Scope 3 emissions, covering a wide range of stakeholders such as contractor management, customers, and all aspects of utilities and power activities. Additionally, WHAUP has promoted the use of environmentally friendly materials throughout our supply chain to ensure sustainability across all business processes. We have also collaborated with communities on low-carbon community development projects, organizing educational activities on efficient energy use and waste reduction both within the organization and in communities, leading to sustainable local changes.

These operations reflect a commitment to achieving the Net Zero goal by 2050, demonstrating our dedication and effort in building a sustainable future and continuously addressing climate change in all dimensions.

3. MANAGEMENT APPROACH COMMITMENT TO LONG-TERM CARBON EMISSIONS REDUCTION

WHAUP recognizes the urgency of climate change and has accelerated our action plans to address the impacts. We are committed to expanding business growth while striking an appropriate balance across economic, environmental, and social aspects. We aim to be a key player in the utilities and power sector in managing greenhouse gas emissions, a primary cause of global warming. WHAUP has established an Environmental Quality, Energy Conservation, and Biodiversity Policy, aligned with WHA Group's environmental policy, which is regularly reviewed and updated to keep pace with global trends. The core of the policy is to promote the adoption of new innovations in business development and operations. It focuses on and encourages the use of green energy, including solar power and other renewable energy sources, to reduce greenhouse gas emissions from our relevant activities, decrease energy consumption in business operations, and mitigate impacts on biodiversity.

Under the operations of WHA Group, WHAUP has adjusted our future investment approach to align with long-term greenhouse gas emission reduction targets and the Paris Agreement's objective of limiting the global temperature increase to no more than 1.5 degrees Celsius. In every investment, WHAUP considers the environmental impact and the ability to reduce emissions from various activities. Future investment decisions will consider sustainability and long-term development, including technological changes and innovations that support emission reduction and decrease reliance on environmentally impactful energy sources.

Furthermore, WHAUP has set a plan to divest from high-carbon assets or products. We will consider

shifting investments to projects that can help reduce greenhouse gas emissions more significantly, especially in sectors that rely on fossil fuels or high-carbon technologies. We have set Scope 3 emission reduction investment targets in accordance with the Science-based Targets Initiative (SBTi). This includes defining investment plans that support the use of clean energy, high-efficiency technologies, and projects that help reduce long-term environmental impacts. Additionally, we emphasize collaboration with business partners in the supply chain to promote carbon reduction approaches in all operational processes. We also develop criteria and standards for selecting investment projects that align with sustainability goals and help drive a tangible low-carbon economy.

WHAUP has adopted an approach that links future capital expenditures with our decarbonization goals by incorporating environmental risk assessments and sustainable technology in the planning and allocation of investment budgets for all projects. This evaluation considers the potential impacts of climate change on our activities. By setting clear long-term greenhouse gas reduction targets and monitoring adherence to investment plans, WHAUP ensures that our investment approach drives the transition towards a sustainable and low-carbon future. We focus on utilizing renewable energy within our own operations and encourages customers to invest in and choose more alternative energy sources. We aim to achieve 1,200 MW of renewable energy production by 2029, which equates to an emission reduction of 683,000 tCO₂e per year, from an accumulated renewable energy capacity of 437 MW as of 2024.

Beyond utilizing renewable energy from solar power systems, WHAUP is dedicated to exploring new approaches for clean energy production to reduce reliance on the electricity grid. This includes the ongoing installation of Hydro Micro Turbine Generator, a technology that converts excess water pressure into electricity. This project is expected to be completed and operational by 2025. Additionally, WHAUP incorporates high-efficiency technologies into our water production processes by implementing Variable Speed Drive (VSD) System, which is an application of high-efficiency technology designed to enhance the operational capabilities of machinery, reduce energy consumption, and minimize losses in the production process.

In 2024, WHAUP discloses our environmental performance data in alignment with the Task Force on Climate-Related Financial Disclosures (TCFD) framework. We adjust our disclosures in the sustainability report to comply with TCFD, ensuring transparency and effectively reflecting on our climate change risk management operations. This also provides crucial information on strategies for addressing climate-related risks and opportunities, demonstrating WHAUP's commitment to transparent climate change disclosures that align with international guidelines. Furthermore, WHAUP and WHA Group plan to review and update our Environmental Quality, Energy Conservation, and Biodiversity Policy annually. This ensures the policy remains current and consistent with the TCFD framework, while strengthening our capabilities for sustainable business operations and meeting the expectations of international stakeholders.



CLIMATE CHANGE MANAGEMENT FRAMEWORK

WHAUP recognizes the urgency of climate change and its impact on business. WHAUP’s operations rely on natural resources, such as rainwater for water production and sunlight for renewable energy. Natural disasters like floods, droughts, and storms can directly affect business operations and impact both internal stakeholders, such as employees, and external stakeholders, including customers and communities. Therefore, we are committed to business growth while fostering a balance between the economy, environment, and society especially in the industrial, utilities, and power sectors, by managing greenhouse gas emissions, a key contributor to global warming.

To address climate change, we have studied global developments and conducted a comprehensive risk analysis. This includes physical risks related to weather conditions and transition risks arising from business adaptation to evolving regulations and new innovations. We also seek out emerging opportunities to strengthen our business, utilizing the following risk and opportunity management framework:



3.1 GOVERNANCE STRUCTURE

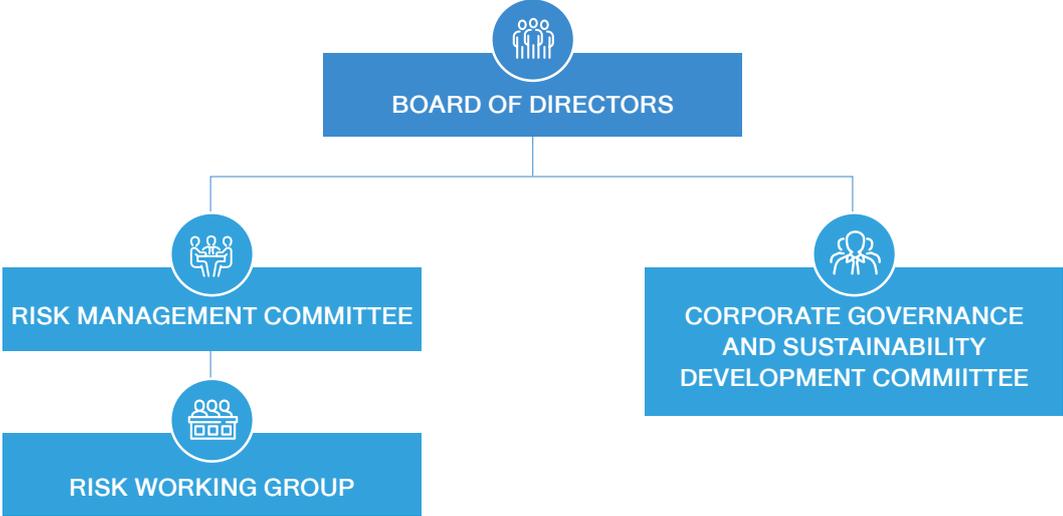
As part of WHA Group, WHAUP conducts our business by strictly adhering to WHA Group’s environmental strategy. WHAUP has established a Corporate Governance and Sustainable Development Committee alongside the Risk Management Committee. Both committees operate under the oversight of the Board of Directors. The Corporate Governance and Sustainable Development Committee is responsible for defining strategies related to climate change and monitoring progress toward established goals. Concurrently, the Risk Management Committee is tasked with appointing a working team to manage

climate-related risks and opportunities in alignment with these strategies.

The Risk Management Working Team analyzes and discusses potential risks to the organization, considering both external and internal factors. These include strategic risks, operational risks, financial risks, compliance risks, and emerging risks. Examples of these emerging risks include climate policy risk and digitalization & business model disruption. (Further details on emerging risks can be found in the Risk and Crisis Management section).



The working team’s performance is reviewed by the Risk Management Committee to evaluate the effectiveness of management, and the results are subsequently reported to the Board of Directors at least four times per year. This close monitoring ensures that risks remain within the organization’s risk appetite level and supports the achievement of WHAUP’s strategic objectives.



CLIMATE CHANGE GOVERNANCE AND RESPONSIBILITIES

ROLE	RESPONSIBILITIES
Board of Directors (BOD)	The BOD provides visions, missions, directions, and operational strategies with an efficient performance monitoring as well as the evaluation system, which is independent from the management team.
Corporate Governance and Sustainable Development Committee	The Corporate Governance and Sustainable Development Committee is responsible for developing climate-related strategies, monitoring progress, conducting audits, overseeing risk management, and ensuring that policy implementation aligns with the defined plans. These efforts are part of WHAUP’s overall sustainable development strategy. The Committee holds meetings to follow up on climate-related issues at least once a year. In 2024, the Committee held a meeting on 18 July 2024 to review and establish appropriate practices.
Chief Executive Officer (Group CEO)	The CEO is responsible to manage the organization according to the established policies, plans and budgets under the approval of the Board of Directors. CEO also has the responsibility of establishing strategic plans to oversee climate-related risks and opportunities and ensuring that sufficient resources are allocated for mitigating impacts of climate-related risks.
Risk Management Working Team, Sustainable Development Working Team, in collaborations with divisions and business units	The working teams are tasked to establish risk management policies and practices to manage climate-related risks, as well as assess and review risk factors, considering both internal and external factors which may interfere WHAUP’s target achievement. They also oversee the operations to ensure appropriate measures in line with the business are taken place to tackle climate change. The teams are leading by Mr. Akarin Prathuangsit, Deputy Chief Executive Officer and Chief Operating Officer, who also acts as an executive level climate who oversees climate change related issues according to our sustainability strategy.

CLIMATE-RELATED MANAGEMENT INCENTIVES

In addition to economic performance, WHAUP has set climate change issue as a Key Performance Indicator (KPI) for all executives and employees involved in related operations. The KPIs vary for each position and role as follows:

Chief Executive Officer (CEO)

WHAUP has set Key Performance Indicators (KPIs) tied to the remuneration of the Chief Executive Officer's (CEO), specifically related to the reduction of greenhouse gas (GHG) emissions. This approach plays a vital role in steering the organization's climate and sustainability agenda at both strategic and operational levels. By focusing on reducing pollution across all business activities, the framework encourages the CEO to drive progress toward sustainability objectives and deliver meaningful environmental and social benefits.

Senior Executive

WHAUP has implemented Key Performance Indicators (KPIs) tied directly to the remuneration of senior executives, with a primary focus on reducing greenhouse gas emissions. This strategy reinforces the active role of executives in driving climate-related performance across operations, positioning emissions reduction as a central objective that demands ongoing and effective action. For instance:

Executives from each business unit must achieve a 3% reduction in energy consumption. Meeting individual Key Performance Indicators (KPIs) will impact their performance review bonuses if the baseline target is met. This KPI aims to incentivize executives to actively reduce the impact of climate change and drive sustainable results for WHAUP.

Additionally, WHAUP has set a KPI for increasing renewable energy generation capacity, accounting for 10% of WHAUP's overall KPIs. This is linked to financial performance evaluations, with the goal of making renewable energy development a significant contributor to reducing greenhouse gas emissions and fostering business sustainability.

Environmental indicators for senior executives across WHAUP's various business units are crucial for driving WHAUP's climate impact reduction efforts, as follows:

1. Installation and signing of cumulative power purchase agreements for renewable energy (equity-based) totaling 1,200 MW by 2029, which is expected to reduce greenhouse gas emissions (Scope 2) by over 683,808 tCO₂e per year.
2. Reducing the water consumption from natural water sources by approximately 25,000,000 cubic meters per year by 2029, equivalent to the household water consumption of more than 685,000 people.
3. Zero waste management, with zero waste to landfill or incinerate by 2029.

Managers

WHAUP has established Key Performance Indicators (KPIs) for managers to drive efforts in reducing greenhouse gas emissions and fostering organizational sustainability. Managers play a vital role in proposing innovations and approaches that help minimize environmental impact, as well as raising awareness of the importance of sustainable operations at every stage of work.

3.2 RISK AND OPPORTUNITIES MANAGEMENT STRATEGY

WHAUP recognizes the importance of managing risks and opportunities related to climate change. Climate change not only increases operational risks through uncertainty in resources, raw materials, and regulations, but also presents opportunities for businesses to develop innovations and adaptations that appropriately meet the sustainability demands of customers, investors, and communities.

To ensure we can effectively address the impacts of climate change, we have integrated this issue into our enterprise-wide risk management system. This enables us to cope with potential scenarios and mitigate impacts across every stage of the value chain, from upstream to downstream processes, through the following steps:

- Identify significant risks based on severity, likelihood, and relevance to operations.
- Understand the impacts of climate change on business operations.
- Evaluate the effectiveness of existing mitigation measures.
- Determine solutions for potential future climate change issues.

CLIMATE-RELATED SCENARIO ANALYSIS

The main tool WHAUP, as well as WHA Group, uses to analyze risks and opportunities is the Climate-related Scenario Analysis, under operation since 2022. In this analysis, WHAUP has established a timeframe for climate change-related risks, both physical risk and transition risk, dividing them into short-term (1-3 years), medium-term (3-10 years), and long-term (more than 10 years). WHAUP has also developed projects and plans to adapt to physical risks, such as plans to adapt to physical risks and plans to adapt to regulatory environmental risks. This involves performing scenario analysis to anticipate potential future challenges and opportunities. WHAUP has conducted a climate-related scenario analysis in alignment with the Task

Force on Climate-related Financial Disclosures (TCFD) framework, covering four scenarios. Task Force on Climate-related Financial Disclosures (TCFD) and covers 4 scenarios. For the physical risk scenarios, the analysis refers to the Representative Concentration Pathways (RCP) model of the Intergovernmental Panel on Climate Change (IPCC) for greenhouse gas emissions. For transition risk, the analysis refers to scenarios from the International Energy Agency (IEA). This scenario analysis also takes into account new regulations in Thailand, such as the government's target for Thailand to achieve carbon neutrality by 2050 and net zero greenhouse gas emissions by 2065.



TYPE OF CLIMATE RELATED SCENARIO ANALYSIS

PHYSICAL RISK		TRANSITION RISK	
Scenario 1 RCP 8.5 Business as Usual	Scenario 2 RCP 2.6 Low Future Carbon	Scenario 1 IEA STEPS	Scenario 2 IEA NZE 2050
The policies addressing climate change issues are still not stringent enough, and greenhouse gas emissions remain high. The risks associated with physical changes, transitional changes, and the impacts of climate change persist. This may lead to increased temperatures, water scarcity, and more volatile and severe weather conditions. And assume that there is no significant difference in business opportunities compared to the current situation.	There is a rapid transition towards a low-carbon economy, driven by the development of new technologies and policy changes aimed at limiting global temperature increase to no more than 1.5 degrees Celsius.	The policies used to address climate issues are not yet stringent, and greenhouse gas emissions remain high. As a result, the risks from physical changes, transition risks, and the impacts of climate change persist.	Rapid transition to a low-carbon economy through the development of technology and policy changes aimed at limiting the global temperature increase to no more than 1.5 degrees Celsius (achieving Net Zero Emissions by 2050).

THE PHYSICAL RISKS ASSOCIATED WITH CLIMATE CHANGE

Physical Risk	Financial Impact	
	RCP 8.5 Scenario	RCP 2.8 Scenario
<p>Acute Risk: The increasing volatility and severity of weather patterns, including the occurrence of natural disasters, pose significant risks to WHA Group's operational areas.</p>	<ul style="list-style-type: none"> The development and construction of projects may experience delays, which can result in increased costs. These delays can also impact on the reputation of WHA Group and erode customer trust if projects are not delivered on schedule. The client's business operations in the industrial estate may be temporarily halted due to natural disasters, impacting both their confidence in WHA Group and the image of their business. Additionally, there can be indirect repercussions on the supply chain management, such as the inability to deliver products on time and an increase in product prices. Increased cost from flood management and prevention expenses. For example, improving ramp infrastructure within projects located in high-risk areas, and preparing flood prevention equipment, sandbags and water pumps. Increased cost from increased insurance premium payment. Damage is estimated at approximately 78 million Baht, affecting assets and properties such as infrastructure deterioration and premature wear and tear. This can lead to additional expenses for maintenance and repairs of buildings, machinery, and solar panels. <p>Short-term: Medium Medium-term: Medium Long-term: Medium</p>	<ul style="list-style-type: none"> The impact is less severe on maintenance expenses and revenues if the global temperature increases by no more than 1.5 degrees Celsius. The severity and frequency of natural disasters will be lower than anticipated in the event of a temperature increase of more than 4 degrees Celsius. Therefore, there will be a lower impact on maintenance costs and revenues. <p>Short-term: No impact Medium-term: Low Long-term: Low</p>
<p>Acute Risk: The increasingly severe and frequent fluctuations in weather conditions, including droughts, pose a risk to the operational areas of WHA Group</p>	<ul style="list-style-type: none"> The insufficient water supply to meet the demands of customers within the industrial estate can impact on the trustworthiness of WHA Group and the confidence of our customers. However, WHAUP has planned to effectively manage water resources by increasing the capacity of Reclaimed Water production. This will reduce dependence on natural water sources to the maximum extent possible. The increased cost resulting from the expenses incurred in sourcing water resources. Customers may reduce their production capacity, resulting in reduced water demand and subsequently decreased revenue. Furthermore, this could be a reason for customers to decide to relocate their facilities to other countries or areas. There is a need to increase research and development investment in new products and services to combat the challenges of drought. <p>Short-term: Medium Medium-term: Medium Long-term: Medium</p>	<ul style="list-style-type: none"> Drought-related problems would have a lesser impact on financial capital and R&D costs at a lower temperature increase of 4 degrees Celsius. <p>Short-term: No impact Medium-term: Low Long-term: Low</p>

Physical Risk	Financial Impact	
	RCP 8.5 Scenario	RCP 2.8 Scenario
<p>Acute Risk: Increasingly severe and unpredictable weather conditions, including storms, thunderstorms, and lightning.</p>	<ul style="list-style-type: none"> Thunderstorms and lightning can cause damage to the assets of WHA Group, which can impact overall operations, such as increased repair and maintenance costs and higher insurance premiums. Damage to assets and properties, such as infrastructure deterioration and premature aging, can result in additional expenses for maintenance and repairs of buildings, machinery and solar panels for WHA Group. Indirect impacts from supply chain management, such as delayed product deliveries and increased product prices, can occur as a result. <p>Short-term: Medium Medium-term: Medium Long-term: Medium</p>	<ul style="list-style-type: none"> Minor impacts to operation if the global temperature increases by no more than 1.5 degrees Celsius. The severity and frequency of natural disasters would be lower than anticipated compared to a scenario where the global temperature rises by more than 4 degrees Celsius. Consequently, there would be minimal effects on maintenance costs and revenue. <p>Short-term: No impact Medium-term: Low Long-term: Low</p>
<p>Chronic Risk: Increasing mean temperature</p>	<ul style="list-style-type: none"> The increasing average temperature may result in inadequate ventilation within warehouses, prompting tenants to request building improvements or additional equipment installation to enhance heat dissipation efficiency. Consequently, WHA Group may incur higher operating and maintenance expenses. The use of construction materials, such as metal sheets or translucent roofing sheets, may deteriorate more quickly, leading to increased maintenance costs and higher construction project expenses <p>Short-term: Medium Medium-term: Medium Long-term: Medium</p>	<ul style="list-style-type: none"> In this case, the risk is low, and the impact is less than when the temperature increases by 4 degrees Celsius. However, it may result in a slight lack of ventilation inside the warehouse. Therefore, the tenant may request building improvements or additional equipment installation to enhance heat dissipation efficiency, which may increase the operating/maintenance costs for WHAUP. The construction materials used in the building may deteriorate or be damaged quickly. <p>Short-term: No impact Medium-term: Low Long-term: Low</p>

THE PHYSICAL RISKS ASSOCIATED WITH CLIMATE CHANGE

Transition Risk	Financial Impact	
	IEA STEPS Scenario	IEA NZE 2050 Scenario
<p>Policy & Legal: Changes in laws and regulations related to greenhouse gas reduction, such as carbon tax</p>	<ul style="list-style-type: none"> Carbon tax is enforced in 2031. Carbon prices start at USD 5 and remains constant <p>Impacts and Timeframe:</p> <ul style="list-style-type: none"> The anticipated impact on business and finance is not significant since the laws are not yet enforced in the near future. Additionally, the current risk management measures and operational strategies are considered sufficient, and WHA Group is capable of managing and mitigating this risk effectively. New low-carbon technologies often require significant upfront capital. WHAUP will require additional investment in compliance, adding to the overall cost burden of adopting new technologies. 	<ul style="list-style-type: none"> Carbon tax is enforced in 2026. Carbon price is derived from NGFS* climate scenarios. <p>Impacts and Timeframe:</p> <ul style="list-style-type: none"> The government may need to enforce laws and regulations related to greenhouse gas emissions in the near future, with a tendency to prioritize heavy industries. Changes in laws and regulations regarding greenhouse gas emissions may result in higher construction material costs. Increased operational costs due to changes in climate regulations. New low-carbon technologies often require significant upfront capital.

Transition Risk	Financial Impact	
	IEA STEPS Scenario	IEA NZE 2050 Scenario
	<ul style="list-style-type: none"> Decrease in EBITDA after carbon tax deducted (%) - 2031 onwards = -0.02% 	<ul style="list-style-type: none"> WHAUP will require additional investment in compliance, adding to the overall cost burden of adopting new technologies. Decrease in EBITDA after carbon tax deducted (%) <ul style="list-style-type: none"> 2026 = -0.58% (55 million Baht) 2030 = -0.88% 2040 = -1.6% 2050 = -5.2%
<p>Technology: Cost of new technology</p>	<ul style="list-style-type: none"> New low-carbon technologies often require significant upfront capital. Require additional investments in compliance, adding to the overall cost burden of adopting new technologies. WHAUP has considered this scenario as low impact to the organization, as WHAUP already has technology related to renewable energy that is offered to customers, as well as being used within the company itself. This enables efficient and timely response to customer needs. <p>Short-term: No Impact Medium-term: No Impact Long-term: WHA may be impacted (Impact level has not been quantified)</p>	<ul style="list-style-type: none"> New low-carbon technologies often require significant upfront capital. Require additional investments in compliance, adding to the overall cost burden of adopting new technologies. WHAUP considers this scenario as an opportunity. This is because WHAUP already possesses technologies related to renewable energy, which are offered to customers and used internally within WHAUP. These technologies enable WHAUP to meet the demands of customers effectively and promptly. <p>Short-term: No Impact Medium-term: No Impact Long-term: WHA may be impacted (Impact level has not been quantified)</p>
<p>Market: Customer Preference Shift to Low-Carbon Products and Services</p>	<ul style="list-style-type: none"> Customer demand has shifted towards seeking industrial parks that provide more low-carbon facilities and utilities. WHAUP may need to invest in renewable energy sources, energy-efficient buildings, and low-emission transportation options to meet the demand for low-carbon services. The decrease in demand for certain products and services of WHAUP due to changing customer preferences and needs. <p>Short-term: No Impact Medium-term: WHA may be impacted (Impact level has not been quantified) Long-term: WHA may be impacted (Impact level has not been quantified)</p>	<ul style="list-style-type: none"> Customer demand has shifted towards seeking industrial parks that provide more low-carbon facilities and utilities. WHAUP may need to invest in renewable energy sources, energy efficient buildings, and low-emission transportation options to meet the demand for low-carbon services. Customers are placing increasing importance on green energy and renewable energy. WHAUP is capable of offering renewable energy solutions to customers to meet their demands. The decreasing demand for certain products and services of WHAUP due to changing customer preferences and needs. <p>Short-term: No Impact Medium-term: WHA may be impacted (Impact level has not been quantified) Long-term: WHA may be impacted (Impact level has not been quantified)</p>

Transition Risk	Financial Impact	
	IEA STEPS Scenario	IEA NZE 2050 Scenario
Reputation: Limitation to access capital	<ul style="list-style-type: none"> Companies perceived as environmentally irresponsible or lagging in sustainability efforts may struggle to attract investment. Companies with damaged reputations might encounter higher interest rates on loans or less favorable terms on debt issuance as investors and lenders perceive them as higher risk. If WHAUP fails to meet the expectations and demands of stakeholders (such as customers, investors, communities, and society) regarding environmental responsibility and raising awareness about climate resilience, it could have an impact on our reputation and lead to long-term financial consequences. <p>Short-term: No Impact Medium-term: WHA may be impacted (Impact level has not been quantified) Long-term: WHA may be impacted (Impact level has not been quantified)</p>	<ul style="list-style-type: none"> Companies perceived as environmentally irresponsible or lagging in sustainability efforts may struggle to attract investment. Companies with damaged reputations might encounter higher interest rates on loans or less favorable terms on debt issuance as investors and lenders perceive them as higher risk. If WHAUP fails to meet the expectations and demands of stakeholders (such as customers, investors, communities, and society) regarding environmental responsibility and increasing awareness of climate resilience, it could have an impact on our reputation and lead to long-term financial consequences. <p>Short-term: No Impact Medium-term: WHA may be impacted (Impact level has not been quantified) Long-term: WHA may be impacted (Impact level has not been quantified)</p>

OPPORTUNITIES ASSOCIATED WITH CLIMATE CHANGE

Opportunity	Financial Impact	
	IEA STEPS Scenario	IEA NZE 2050 Scenario
Demand shift: Customer Preference Shift to Low-Carbon Products and Service	<ul style="list-style-type: none"> The growing market demand in the real estate sector for renewable energy, eco-friendly practices, and energy-efficient buildings offers a substantial business opportunity for WHA Group. WHAUP can increase market opportunity from sustainable built environment (BREEAM, LEED, etc.) WHAUP can reduce waste generation through circular economy principles. WHAUP can focus on providing renewable energy services, such as solar panel installations, to support customers who seek to utilize renewable energy sources. <p>Short-term: No Impact Medium-term: WHA may be impacted (Impact level has not been quantified) Long-term: WHA may be impacted (Impact level has not been quantified)</p>	<ul style="list-style-type: none"> The growing market demand in the real estate sector for renewable energy, eco-friendly practices, and energy-efficient buildings offers a substantial business opportunity for WHA Group. WHAUP can increase market opportunity from sustainable built environment (BREEAM, LEED, etc.) WHAUP can reduce waste generation through circular economy principles. WHAUP can focus on providing renewable energy services, such as solar panel installations, to support customers seeking to utilize renewable energy sources. This opportunity is valued at approximately 413 million Baht, with estimated development costs around 231 million Baht. <p>Short-term: Low Medium-term: Low Long-term: Low</p>

3.3 STRATEGIES AND BUSINESS OPPORTUNITIES IN RESPOND TO CLIMATE CHANGE



STRATEGIC APPROACH IN NET ZERO TRANSITION

WHAUP acknowledges the significant effects of climate change on the environment, economy, and society, especially in terms of long-term business sustainability. As such, achieving net-zero greenhouse gas emissions has become a central objective in preparing the organization for future challenges and securing sustainable growth. In 2024, WHAUP, as part of WHA Group, adopted WHA Group’s comprehensive and well-structured strategy aimed at reaching the Net Zero goal. This strategy emphasizes the mitigation of environmental risks and the creation of value for society and stakeholders by integrating efforts across three core dimensions.

1. Decarbonize Own Operations)

WHAUP is dedicated to the continuous enhancement of our operations to lower greenhouse gas emissions in Scope 1 and Scope 2. Our efforts prioritize improving energy efficiency throughout all departments and shifting toward renewable and clean energy sources. Key initiatives include the installation of solar panels, implementation of smart energy management systems, and adoption of technologies that reduce dependence on fossil fuels. We also focus on technological innovation, product redesign, and supply chain transformation, alongside investments in research and development to support long-term sustainability.

Moreover, WHAUP collaborated with WHA Group to encourage employee participation in energy conservation by conducting training sessions and awareness campaigns to promote energy-saving practices and individual-level emissions reduction. This approach ensures organization-wide involvement in achieving the Net Zero goal. (Details on performance and targets related to Scope 1 and Scope 2 emissions reduction under this strategy are provided in the “Metrics and Targets” section.)





2. Decarbonize Investment Portfolio

WHAUP places strong emphasis on investing in initiatives that contribute to the reduction of Scope 3 greenhouse gas emissions. This includes accelerating investments in renewable energy and promoting low-carbon technologies, such as wind power, solar energy, and biomass power plants, with the goal of increasing the proportion of clean energy within the investment portfolio.

Concurrently, WHAUP works closely with business partners and entrepreneurs across the supply chain to encourage operations that lower greenhouse gas emissions. This includes infrastructure development aimed at emission reduction, support for green logistics initiatives, and the implementation of systems to monitor and evaluate the environmental impact of supply chain activities. These actions help ensure that our investments lead to long-term environmental impact reduction. (Performance and targets related to Scope 3 emissions reduction under this strategy are detailed in the “Metrics and Targets” section.)

3. Develop Sustainable Ecosystem

WHAUP is dedicated to building a sustainable ecosystem through collaboration with communities, customers, and stakeholders across all sectors. This involves developing processes and projects that address stakeholder needs and promote a low-carbon economy. Examples are establishing sustainability learning programs in communities, supporting the development of clean energy skills and innovation, and developing infrastructure to support the use of clean energy within communities.

We also prioritize developing policies and frameworks aligned with Net Zero targets. This includes setting greenhouse gas emission standards for new projects, supporting environmentally conscious procurement, and incentivizing partners and entrepreneurs who contribute to pollution reduction. All these efforts reflect WHAUP’s commitment to creating a sustainable and balanced future in all dimensions.

WHAUP’s operations, in collaboration with WHA Group, on the path to Net Zero not only help reduce environmental impact but also contribute to improving community quality of life, creating new economic opportunities, and strengthening the confidence of all stakeholder groups that we will remain committed to being a responsible organization for the world and society in the long term.

CLIMATE CHANGE-RELATED RISK MANAGEMENT PROCESS

WHAUP proactively manages climate change-related risks, starting with a comprehensive analysis and assessment of potential business impacts. This involves evaluating severity, likelihood, and relevance of risks to operations, enabling us to identify critical issues and develop effective response strategies. Beyond risk assessment, we also examine the impact of climate change on our business value chain, including production, supply chain management, and customer trust, while considering the organization’s adaptability to these changes.

To address these challenges, we regularly monitor and evaluate the effectiveness of existing mitigation measures, focusing on developing timely responses to evolving situations. At the same time, we establish proactive strategies to address future risks, designing preventive plans and adaptive measures aligned with our sustainability goals. These approaches reflect our commitment to building a resilient business system that can adapt and grow steadily amidst ongoing climate change and evolving business environments.

WHA GROUP'S CLIMATE RISK MANAGEMENT PROCESS			
<p>Risk Identification</p> <ul style="list-style-type: none"> • Identification of internal and external climate-related risks and business impacts through Climate-Related Scenario Analysis. • Categorization of identified risks under four categories: Strategic Risk, Financial Risk, Operational Risk and Compliance Risk. 	<p>Risk Assessment</p> <ul style="list-style-type: none"> • Calculation of risk levels following standardized assessment criteria to evaluate the impacts from climate change. • Prioritization of climate-related risks in the organizational level along with identification of risk appetite scope in line with the business strategy and goals. 	<p>Risk Response and Mitigation Measures</p> <ul style="list-style-type: none"> • Determine measures and risk management process to respond with the climate-related risks and opportunities in every level of the organization (company-wide risk management), covering short-, medium-, and long-term, to prevent potential impacts on the organization and relevant stakeholders as well as reduce the risk level to acceptable level. • Determine remediation measures for those affected by climate change, restoring conditions to their pre-impact state to ensure effective and sustainable recovery. 	<p>Risk Reporting, Monitoring, and Communication</p> <ul style="list-style-type: none"> • Communication of risks to all executives and employees to build a strong risk management culture and reporting risk management progress to Risk Management Committee (RMC) on a quarterly basis • Optimize internal communication channels to disclose climate-related risk information to all relevant departments

PROJECTS AND PLANS FOR ADAPTING TO PHYSICAL RISKS

FLOOD RISK MANAGEMENT

- Designing and constructing flood prevention systems that are appropriate for the rainfall and water conditions in each project area, including the installation and monitoring of water levels in water storage reservoirs and rainwater retention ponds for every industrial estate project. Additionally, WHA Group excavates pits to accommodate continuous water drainage in the event of regular flooding. However, it is essential that the design of the drainage system does not impact the natural water systems and surrounding communities by avoiding the construction of barriers to natural watercourses.
- Selecting areas with low risk of natural disasters or no reported history of disasters for project

development: The majority of WHAUP's projects are located in the Bangna-Trad or Eastern Economic Corridor (EEC) region, which has a low risk of natural disasters.

- Improving infrastructure to address potential climate-related incidents, such as building ramps in projects at risk.
- Installing and continuously monitoring of rainfall depth measurements in every industrial estate.
- Inspect and maintain water barriers and water pumps as required to ensure they are always in proper working condition.
- Installing water level monitoring and alert systems in the drainage channels of the WHA Saraburi Industrial Land (WHA SIL) in order to provide timely notifications and enable proactive planning and problem prevention in case of flooding.

- Installing water level monitoring and alert systems, including SCADA systems, to control the operation of water pumps and closely monitor water levels. Additionally, allocate raw water quantities in the raw water reservoir and water retention ponds within Eastern Seaboard Industrial Estate (Rayong) (ESIE), WHA Eastern Seaboard Industrial Estate 1 (WHA ESIE 1), WHA Rayong Industrial Land (WHA RIL), WHA Chonburi Industrial Estate 1 (WHA CIE 1), and WHA Eastern Seaboard Industrial Estate 2 (WHA ESIE 2)
- Establishing emergency response plans and procedures, including conducting drills to prepare for and respond to volatile weather conditions.
- Regularly assessing the changes of the environment and surrounding areas in each project.

DROUGHT RISK MANAGEMENT

- Implement the Natural Water SCADA project to efficiently manage the utilization of water from natural sources. This includes installing water level monitoring devices in water storage reservoirs and an automated control system for water pumping equipment to closely monitor water levels. Additionally, allocate the raw water quantity in raw water storage tanks and water retention ponds in Eastern Seaboard Industrial Estate (Rayong) (ESIE), WHA Eastern Seaboard Industrial Estate 1 (WHA ESIE 1), WHA Rayong Industrial Land (WHA RIL), WHA Chonburi Industrial Estate 1 (WHA CIE 1), and WHA Eastern Seaboard Industrial Estate 2 (WHA ESIE 2)
- Consider local government or private sector water sources that have the potential to increase the raw water supply for industrial customer services (Alternative Raw Water Resources). Study and develop desalination technologies to convert seawater into fresh water (Desalination Technologies).
- Monitor and assess the usage of water from natural sources and provide reports to relevant parties at least once a month to keep them informed.
- Repairing and maintaining the surrounding soil around the water barriers in the water distribution system to prevent erosion and instability.

- Constructed additional ponds and reservoirs to ensure an adequate water supply in the WHA SIL industrial zone. A new reservoir will be built in the WHA SIL area, increasing the water capacity from 416,671 cubic meters to 800,271 cubic meters. In addition, floating pumps will be installed to maximize the water pumping capability up to the minimum capacity level of the reservoir, which is 998,798 cubic meters.
- Upgrading the groundwater reservoir at WHA Rayong Industrial Land (WHA RIL) to increase the water supply efficiency within the area by a daily increment of 1,121 cubic meters, which accounts for 10% of the water demand.
- Implementing a water reclamation system, which helps reduce reliance on natural water sources. This system enables the reuse of wastewater and reduces the volume of discharged water into public water sources. The project not only reduces the cost of sourcing raw water but also avoids potential conflicts arising from shared resources with the local community. As a result, the project has been considered for license renewal to continue our sustainable business operations.
- Regularly assessing the changes of the environment and surrounding areas in each project.

STORM AND LIGHTNING RISK MANAGEMENT

- Selecting construction materials and equipment that meet high standards to ensure durability and withstand severe weather conditions.
- Studying and developing innovative materials and equipment used in the construction of solar power generation projects to reduce temperatures, prevent overheating and lightning strikes.
- Inspecting the installations thoroughly to ensure compliance with the design standards for mounting systems that can withstand wind speeds of 25 meters per second (equivalent to a tropical storm).
- Monitoring the weather conditions and changes closely through various news channels and notifying customers to be prepared.
- Regularly assessing the changes of the environment and surrounding areas in each project.

INCREASING TEMPERATURE RISK MANAGEMENT

- Selecting innovative materials for constructing warehouses that can help reduce internal temperatures and enhance the efficiency of the overall structure, including air ventilation.
- Developing a long-term disaster management and risk mitigation plan.
- Upgrading the infrastructure to accommodate events that may arise from climate change, such as installing solar cells using long L-fleet for better air ventilation under PV module.
- Enhancing awareness and capabilities to effectively manage the entire value chain.

PLANS FOR ADAPTING TO ENVIRONMENTAL REGULATORY (TRANSITION RISK) POLICY AND LEGAL RISK MANAGEMENT

- Tracking relevant legal changes and establishing guidelines for effective mitigation actions
- Planning to increase energy production from renewable energy to reduce greenhouse gas emissions and environmental impacts as well as controlling greenhouse gas emissions
- Focusing on the use of construction materials that reduce greenhouse gas emissions, including the use of high-performance construction materials to reduce the generation of waste, and supporting the reuse and recycle process of construction materials

TECHNOLOGY RISK MANAGEMENT

- Expanding alternative energy services with the readiness from the building design process, enabling immediate solar rooftop installation.
- Exploring technologies related to carbon capture and storage to reduce the impact of climate change in the future.

MARKET RISK MANAGEMENT

- Continuously adopting modern technologies to promote the concept of Smart Eco Industrial Estates.
- Providing alternative energy services, especially solar energy, fully integrated in WHA Group's warehouses, supporting customers to reduce energy costs and the environmental impacts.

REPUTATION RISK MANAGEMENT

- Planning and implementing strategy towards becoming net zero while supporting customers and business partners in renewable energy transition.
- Collaborating with customers and business partners to mitigate the impacts of climate change across the value chain.

FINANCIAL PLANNING

- WHAUP, under WHA Group's operations, has conducted comprehensive and careful financial planning to align with the climate-related risks and opportunities, a current critical issue. This planning covers various aspects affecting business sustainability, including operational expenses (OPEX) related to efficient cost management, capital expenditures (CAPEX) to support projects and innovations that reduce environmental impacts, mergers and acquisitions (M&A) aimed at strengthening long-term capability and sustainability, as well as effective debt management to maintain the organization's financial stability. Currently, the Group plans to install solar rooftop systems at our water treatment facilities, with a total capacity of approximately 1.62 MWp within the next two years. Preliminary assessments estimate this will reduce electricity costs by about 9.26 million baht per year, amounting to a total savings of approximately 277.71 million baht over the project's lifetime until 2055. This initiative not only helps reduce long-term operational costs but also promotes the use of clean energy, aligning with our sustainability goals.
- In addition, WHAUP values continuously evaluating and adjusting our financial strategic plans to suit the evolving environment, focusing on minimizing business risks, enhancing opportunities for sustainable growth, and creating added value for all stakeholders in every dimension. This approach ensures WHAUP can become a sustainability leader in the industry and effectively respond to climate change challenges.

ACTION PLANS TO REDUCE THE IMPACTS OF CLIMATE CHANGE

WHAUP has fully achieved our energy and environmental targets. However, we remain committed to continuous development and forward momentum, undertaking new projects that prioritize the adoption of modern technology to become a Net Zero organization by 2050.

WHAUP has identified climate change as a materiality issue for our business operations and has established key operational strategies to effectively reduce greenhouse gas emissions at all times. WHAUP’s action plans align with our climate change strategy, covering short-term, medium-term, and long-term goals, to achieve Net Zero emissions by 2050 as follows:

ACTION PLAN	APPROACH
Increase the proportion of production and consumption of renewable energy	Focus on increasing the share of renewable energy production and consumption across all operations to reduce reliance on fossil fuels and promote environmentally friendly energy use, thereby lowering greenhouse gas emissions and supporting long-term sustainability.
Improve and transform business processes to enhance energy efficiency	Improving business processes is another vital strategy to enhance energy efficiency in every aspect, from production to transportation, by adopting advanced technologies that reduce energy consumption and increase productivity. This includes supporting the use of electric vehicles within the organization, business sector, and Thailand by investing in EV infrastructure and promoting EV adoption nationwide to help reduce carbon emissions from transportation.
Increase the share of green portfolio within the business group	Expand the share of green portfolio, which includes products and services that reduce environmental impacts. Investing in low-impact assets and activities supports growth of socially and environmentally responsible businesses.
Develop and offer products and services that help reduce greenhouse gas emissions throughout the value chain	Develop and offer products or services that can reduce GHG emissions throughout the entire value chain, ensuring sustainability at every stage, from raw material sourcing and production to consumption and recycling.
Raise awareness of energy conservation and climate change among employees, business partners, and all stakeholders involved.	Raise awareness of energy conservation and climate change as a key strategy to engage all parties, including employees, partners, and stakeholders, collectively in driving sustainable change within the organization and society.
Plan reforestation, forest conservation, and expansion of green spaces to naturally absorb carbon dioxide from the atmosphere.	Conduct reforestation and forest management projects to increase green areas, using natural methods to absorb carbon dioxide from the atmosphere, which helps mitigating climate change impacts.

WHAUP constantly monitors and evaluates performance against these plans to ensure that we are moving toward the achievement of net zero greenhouse gas emissions in 2050 and support the sustainable development of all parties.

COMMITMENT TO CLIMATE CHANGE MANAGEMENT

WHAUP recognizes the importance of leading efforts to address environmental issues through strategies that integrate technologies, innovations, and stakeholder engagement to reduce environmental impacts and foster long-term sustainability.

1. Roles and targets of environmental impact reduction

WHAUP is committed to minimizing the environmental impact of our operations, particularly those related to natural resource use. To achieve this, we have adopted advanced technologies to tackle issues related to greenhouse gas emissions and global warming. The core objectives include reducing greenhouse gas emissions, promoting the use of renewable energy, and developing innovative solutions to drive sustainability across the entire value chain.

2. Success in reducing greenhouse gas emissions

With strong commitment and systematic operations, WHAUP successfully achieved carbon neutrality in 2021. The Group is now working toward the ultimate goal of net zero emission by 2050, following the Science Based Targets Initiative (SBTi) guidelines.

3. Collaboration in carbon emissions reduction of WHAUP and other organizations

WHAUP has consistently advanced our efforts to align with the Paris Agreement's objectives, particularly in limiting global temperature rise and reducing greenhouse gas emissions across all aspects of our operations. In 2024, WHAUP collaborated with academic institutions, private sector companies, and public agencies to establish the Thailand CCUS Consortium. This initiative aims to strengthen Thailand's capabilities in Carbon Capture, Utilization, and Storage (CCUS) technology, supporting our sustainable development for long-term benefits, including maintaining the global temperature increase within 1.5 degrees Celsius in line with the Paris Agreement.

In 2024, we further demonstrated our commitment by providing operational support and promoting advancements in carbon capture technology. We also became a member of the Steering Committee of the Thailand CCUS Alliance (TCCA) under the Thailand CCUS Consortium, in collaboration with the National Nanotechnology Center and other leading partners. The alliance's primary mission is to accelerate CCUS technology development to help achieve Thailand's targets for carbon neutrality and net-zero emissions.

CCUS is considered a crucial factor in the transition of Thai industries toward a low-carbon economy. Amid increasing pressure to reduce emissions, CCUS not only helps mitigate environmental impacts but also presents opportunities for industries to grow sustainably and remain competitive in global markets. For CCUS to be effectively adopted across the industrial sector, Thailand must develop suitable infrastructure, establish investment-friendly policy frameworks, and foster collaboration between the public and private sectors.

Moreover, integrating CCUS with renewable energy and advancing carbon utilization technologies will enhance overall energy system efficiency. If CCUS can be systematically applied to key industries such as power plants, petrochemicals, and manufacturing, Thailand will be able to significantly reduce greenhouse gas emissions, move closer to its global climate goals, and strengthen national competitiveness in the emerging green economy.

ENVIRONMENTAL OVERSIGHT OF CUSTOMERS AND TENANTS IN INDUSTRIAL ESTATES

WHAUP is committed to supporting our customers in achieving sound environmental management. WHAUP offers solar rooftop installations for buildings and warehouses and provides Power Purchase Agreements (PPAs) to customers at prices more competitive than grid electricity. This initiative promotes customers and tenants to choose solar energy as an alternative power source. This collaboration between WHAUP and our tenants delivers tangible results in reducing environmental impact and supports long-term sustainable development.

Additionally, WHAUP and WHA Group jointly encourage tenants to utilize resources efficiently and minimize waste in their operations. This includes efficient water and energy use, alongside promoting the adoption of technology and innovation to reduce greenhouse gas emissions and reliance on fossil fuels. Furthermore, WHAUP emphasizes waste management by supporting waste segregation, recycling, and reducing landfill waste. We also campaign for tenants to choose reusable materials to minimize long-term environmental impact.

WHAUP, in collaboration with WHA Group, also organize training and seminars to continuously educate tenants on environmentally friendly practices, as well as providing consultation on operations aligned with sustainable development goals.

3.4 METRICS AND TARGETS

PERFORMANCE ON GREENHOUSE GAS EMISSION REDUCTION (SCOPE 1, SCOPE 2, AND SCOPE 3)

WHAUP’s GHG emission data

Performance	Unit	2021	2022	2023	2024
 Direct (Scope 1) GHG Emissions		258	356	415	447
 Indirect (Scope 2) GHG Emissions		13,457	12,083	12,944	16,185
 GHG Emissions (Scope 1 and Scope 2)	tons CO2e	13,715	12,439	13,359	16,632
 Indirect (Scope 3) GHG Emissions		2,073,990	2,087,705	2,162,538	2,153,900
 GHG Emissions Intensity (Scope 1 and Scope 2)	tons CO2e/ Million THB	5.50	4.79	3.12	4.30
Data Coverage	%	100	100	100	100

WHAUP tracks the effectiveness of its climate change measures and calculations within its organizational boundary-setting methodology by control approach. Under this approach, WHAUP reports 100% of greenhouse gas emissions from entities over which it has financial control. The company systematically collects and records data, reports progress periodically and continuously reviews its strategies. Furthermore, these outcomes are linked to the Key Performance Indicators (KPIs) of relevant executives and employees to ensure that greenhouse gas emission reductions are effective and comply with international standards.

GHG EMISSION REDUCTION TARGETS

Short-term GHG emission reduction targets Targets within 5 years from the base year		Long-term GHG emission reduction targets Targets beyond 5 years from the base year	
Absolute GHG emission reduction target (Scope 1 and 2) by 18.7% by 2025 from the base year 2021.	GHG emission intensity target per total revenue and share of profit (Scope 1 and 2) to be 1.45 tCO2e per 1 million THB of total revenue and share of profit by 2025 from the base year 2021.	Absolute GHG emission reduction target (Scope 1 and 2) by 42% by 2030 from the base year 2021.	GHG emission reduction target (Scope 3) by reducing emission intensity from investments by 74% per 1 kWh energy by 2030 and by 90% by 2050 from the base year 2021.
			Net Zero emissions target by 2050.

5. IMPACTS ON STAKEHOLDERS AND ENVIRONMENT

WHAUP is aware that our business operations depend on natural factors and have potential environmental impacts. For instance, solar energy project development might affect local ecosystems, and water management could impact natural water reserves and surrounding communities. Additionally, WHAUP's supply chain partners might generate greenhouse gas emissions or e-waste when products reach end-of-life. To address these issues, WHAUP sees an opportunity to leverage technological capabilities for serious problem-solving. We are committed to managing climate change risks and opportunities with the intention of creating positive environmental and social impacts for stakeholders, while simultaneously mitigating negative impacts from business operations. We prioritize developing and improving projects that can respond to challenges and create long-term value, as follows:

Positive Impact on Environment

WHAUP prioritizes minimizing environmental impact through the implementation of modern renewable energy and energy-saving projects. This includes utilizing renewable energy, reducing Greenhouse Gas (GHG) emissions at all operational levels, and applying circular economy principles such as wastewater treatment for reuse. These processes not only help conserve limited natural resources but also mitigate the long-term effects of climate change. Furthermore, preserving biodiversity is a key objective we focus on through policy design and investment in environmentally friendly technologies.

Positive Impact on Society and Stakeholders

WHAUP prioritizes building strong relationships with all stakeholder groups, including surrounding communities, employees, customers, and suppliers. This is achieved by actively listening to feedback and incorporating suggestions to develop energy and environmental projects that appropriately meet stakeholder needs. Examples include developing processes that help reduce costs, increase efficiency, and minimize negative impacts. Additionally, WHAUP organizes activities to enhance sustainability

knowledge for employees at all levels and promotes community participation in various projects to build long-term trust and confidence.

For customers, WHAUP has developed policies that increase flexibility and reduce risks from climate change, safeguarding their interests and minimizing business impact. Meanwhile, investors and partners are assured that WHAUP is socially and environmentally responsible in all aspects.

Furthermore, WHAUP's operations include managing risks related to droughts, floods, and uncertainties from climate change. This is done through regular climate risk planning and assessment to ensure WHAUP is prepared for future scenarios. These actions also protect customer interests and reduce potential negative impacts at every stage of the value chain.

6. NEXT STEP

WHAUP has established both short-term and long-term targets for greenhouse gas (GHG) emission reduction. In the short term, within 5 years from the base year in 2021, WHAUP aims to reduce absolute GHG emissions (Scope 1 and 2) by 18.7% by 2025 and to reduce GHG emission intensity per total revenue and share of profit (Scope 1 and 2) to 1.45 tCO₂e per 1 million baht of total revenue and share of profit by 2025. For the long term, WHAUP has set targets to reduce absolute GHG emissions (Scope 1 and 2) by 42% by 2030, compared to the base year in 2021. Regarding Scope 3 emissions from investments, WHAUP has set a target to reduce GHG emission intensity by 73.7% per 1 kWh energy by 2030 and from the base year in 2021. Furthermore, WHAUP is committed to achieving Net Zero GHG emissions by 2050 in support of the global transition to clean and sustainable energy.





ENERGY MANAGEMENT



1. OUR POSITION

Effective energy management is crucial for modern business. Improving energy efficiency and transitioning to clean energy reduces reliance on fossil fuels, which are the primary source of greenhouse gas emissions in the industrial and business sectors. These efforts not only mitigate environmental impact but also promote long-term sustainability.

WHAUP has implemented energy management strategies such as optimizing production processes, integrating renewable energy systems like solar and wind power into production, and investing in energy-saving technologies. Setting clear targets, such as reducing energy consumption or greenhouse gas emissions within a defined timeframe, effectively motivates WHAUP to achieve our environmental goals.

2. ENERGY CONSERVATION COMMITMENT

WHAUP recognizes the importance of efficient energy use because our energy business operations inherently rely on energy production and consumption. This directly impacts climate change and can lead to pollution affecting society and communities if not managed in a balanced way. Therefore, WHAUP is committed to conducting business with quality and global standards, alongside environmental conservation efforts through energy conservation activities. WHAUP has established

an energy conservation policy approved by executives, assigning an Environmental Committee to develop plans and guidelines for environmental operations. This includes setting targets for environmental and energy conservation operations, as well as implementing activities and projects to demonstrate the necessity of energy conservation projects within WHAUP. This policy covers the practices of all employees, as well as the management of construction and utility systems of all four business groups to comply with the Building Control Act B.E. 2540 (1997) and the Environmental Conservation Promotion and Enhancement Act (No. 2) B.E. 2550 (2007). This is to align with the global move towards the Net Zero emissions target and Low Carbon Society.

As “The Ultimate Solution for Sustainable Growth”, WHAUP offers services to customers seeking to offset their carbon footprint through a variety of renewable energy solutions. The use of renewable energy enables customers to manage energy more efficiently, reduce reliance on the electricity grid, and minimize environmental impact, while adding business value. We provide customers with an end-to-end solar rooftop service on a long-term post-installation contract basis, without any upfront costs. This includes design services, permit applications, long-term operations, and maintenance. WHAUP’s energy management approaches are as follows:

2.1 ENERGY CONTROL WITHIN WHAUP

WHAUP emphasizes energy efficiency in our operational processes, aiming to reduce dependence on non-renewable energy while promoting greater use of sustainable energy through various projects.

ACTION PLAN	APPROACH
Energy Conservation in Industrial Estates and Office Buildings	WHAUP promotes efficient energy use within industrial estates and office buildings through effective management aimed at reducing excessive energy consumption and enhancing operational sustainability. This includes installing automatic lighting and air conditioning systems, selecting energy-efficient air conditioning units appropriate to building size, and replacing pumps and motors to match the volume of wastewater.
Solar System Installation	WHAUP has implemented solar power systems to supply electricity for telecommunications towers and office rooftops and has also transitioned to solar-powered streetlights within industrial estate roads. These measures aim to reduce reliance on non-renewable energy sources and lower greenhouse gas emissions in energy management processes.
Green Product Development for Construction	In construction processes, WHAUP selects materials and tools with minimal environmental impacts to reduce waste and carbon emissions, while supporting the use of sustainable products in project developments.
Application of Technology for Energy Analysis and Optimization	WHAUP adopts modern technologies to analyze energy use within operations and improve process efficiency. This helps reduce energy loss and enhance outcomes aligned with environmental goals.
Adoption of High-Efficiency Technology to Enhance Operations	WHAUP emphasizes the adoption of high-efficiency technology in operational processes to increase the capability of machinery and equipment, reduce energy consumption, and minimize process losses. This includes installing Variable Speed Drives (VSD) to control and adjust the motor speed of high-pressure pumps in RO systems for optimal performance, reducing energy overload and improving energy efficiency. WHAUP also focuses on using clean and renewable energy to reduce dependence on grid electricity by implementing the hydro micro turbine generator (HydroXS) project with a production capacity of 112 KW. The system utilizes excess pressure from raw water pipelines to generate electricity through a micro turbine generator. These initiatives contribute to reducing energy consumption while promoting efficient and sustainable energy use in the long term.
Smart Building and Energy Efficiency System	WHAUP, in collaboration with WHA Group, incorporates Smart Building System and Energy Management Systems (EMS) into office buildings and warehouses to control energy usage, reduce waste, and enhance energy efficiency.
Development of Renewable Energy Projects	WHAUP aims to develop and expand renewable energy projects, such as solar rooftop and wind energy within industrial estates and office buildings, to increase the proportion of clean energy use, reduce reliance on fossil fuels, and lower greenhouse gas emissions.
Green Mobility and EV Infrastructure Project	WHAUP supports WHA Group in promoting the use of clean energy in transportation by promoting electric vehicles (EVs) and developing infrastructure such as EV charging stations within industrial estates and office buildings to reduce fossil fuel consumption.

Apart from the projects mentioned above, WHAUP also encourages all employees to participate in energy conservation projects. We aim to increase outcomes, reduce operational costs, and minimize greenhouse gas emissions, reflecting our commitment to long-term sustainability development.

THE ROLE OF WHAUP IN ENERGY CONSUMPTION CONTROL WITHIN WHA GROUP

WHAUP plays a crucial role in supporting WHA Group’s energy targets by providing efficient energy system installation and management. Currently, we have achieved our accumulated target of signing Power Purchase Agreements (PPAs) for renewable energy (on an equity basis) exceeding 437 MW. This marks a significant step in promoting the use of renewable energy across all sectors, while also supporting organizational development focused on long-term sustainability and environmental friendliness.

2.2 PROMOTING ENERGY SAVING AMONG CUSTOMERS AND ENTREPRENEURS

Even though WHAUP does not have direct power to control entrepreneurs in industrial estate areas or warehouse tenants to reduce energy consumption, we remain committed to and responsible for supporting renewable energy transition of customers by developing sustainable energy projects and solutions.

ACTION PLAN	APPROACH
Offering diverse renewable energy solutions and projects	WHAUP offers a variety of solutions, such as the solar energy system installation to help customers utilize efficient and environmentally friendly natural renewable energy.
Supporting Customers in Reducing Fossil Fuel Dependence and Shifting to Clean Energy	WHAUP supports and encourages customers to adopt clean energy sources such as solar and wind power. This helps reduce their reliance on fossil fuels and minimizes environmental impact.
Supporting the Use of Smart Technology for Energy Management	WHAUP promotes customers' use of smart energy monitoring and control systems. These systems enable the analysis of energy consumption, reduce waste, and improve energy efficiency within buildings and factories.
Supporting Energy-Saving Ventilation Systems and Appliances	WHAUP encourages the transition to energy-saving equipment, such as LED lighting, high-efficiency ventilation systems, or Inverter air conditioners in buildings and factories.
Supporting Energy Storage Solutions	WHAUP supports the use of energy storage systems, such as Battery Energy Storage Systems (BESS), to help customers manage energy efficiently, reduce peak electricity demand, and enhance the stability of the energy system.
Providing Consulting and Energy Management Services	WHAUP provides consulting and supports the development of energy management solutions for customers, such as Smart Energy Management System. This solution helps reduce excess energy consumption and increase energy efficiency in buildings and industrial factories.
Developing Infrastructure for Clean Energy Use	WHAUP supports the development of Smart Grids and infrastructure for clean energy use, such as EV Charging Stations, to facilitate the transition to sustainable energy.

These commitments and initiatives not only support environmental protection but also generate long-term sustainable value for customers and neighboring communities. This strategy fosters sustainable and innovative economic growth within a framework of efficient energy use and minimized environmental impact.



3.4 METRICS AND TARGETS

WHAUP recognizes that climate change can impact our business operations and stakeholders, including industrial estate customers and surrounding communities. To prevent risks that could disrupt our value chain, WHAUP has developed a climate risk management process. This focuses on both mitigating negative impacts and capitalizing on opportunities arising from weather pattern shifts. Even though our operation sites within WHA Group’s industrial estates have never experienced flooding due to meticulous site selection and thorough analysis, we continue

to implement stringent risk mitigation measures to enhance long-term stability. We are continuously preparing for climate change, with the Chief Executive Officer responsible for setting policies and monitoring environmental progress.

In 2024, WHAUP clearly defined our climate change targets according to plan and tracked performance through systematically data collection and recording, with regular progress reports and reviews of outcomes and lessons learned to continuously refine policies and strategies

ENERGY CONSUMPTION REDUCTION PERFORMANCE AND TARGETS ENERGY CONSERVATION PERFORMANCE INDICATORS AND TARGETS

Amount of Energy Consumption	Unit	2021	2022	2023	2024	2024 Target
Non-renewable energy consumption 	MWh	29,618	29,326	32,793	37,639	31,809
Proportion of non-renewable energy consumption per total revenue and share of profit 	kWh/ million baht	11.9	7.58	7.88	9.31	8.00
Renewable energy consumption 	MWh	491	1,681	1,598	1,159	1,600

TARGET OF PROVIDING RENEWABLE ENERGY SERVICES

In 2024, WHAUP achieved the goal of contracting and providing renewable energy systems totaling 437 MW. By the end of 2024, WHAUP had installed solar rooftop systems for customers, with a total installed capacity of 151 MW. The electricity generated from these solar panels can replace power from the grid, thereby reducing Scope 2 greenhouse gas emissions by approximately 61,808 tCO₂e per year. We also set long-term targets to increase production capacity and expand long-term contracts in the future as follows:

Production Capacity	Performance	Target	
	2024	2024	2024
Capacity of Renewable Power Purchasing Agreement (PPAs) at Year-End (MW) ¹	437	450	1,200
Annual reduction of the amount of greenhouse gases from substituting electricity of the power supply system provided to customers per year which can be used to offset the carbon emissions of WHA Group (tCO2e) (assuming full year operation basis) ²	61,808	256,000	683,000

Remark: ^{1/} Included MW under both operation and development stage; as of end 2024, operational 173 MW and 264 MW under development.

^{2/} Expected level of GHG offset on per year basis. Actual level can be varied with multiple operating parameters and standard used to calculate kg CO2e/kWh of the grid.

Capacity of operating solar projects selling to industrial customers increased from 131 MW in 2023 to 173 MW in 2024. Specifically, the total solar power supplied to customers in 2024 amounted to 157,354,758 kWh in 2024, accounted for a reduction of 61,808 tCO2e, based on the amount of electricity replaced from the grid.

ENERGY SAVING TARGETS

WHAUP aims to reduce our electricity consumption from the grid within our own operations by 3% by 2024, compared to the base year 2019. In 2024, WHAUP's accumulated electricity generation capacity from signed Power Purchase Agreements (PPAs) for renewable energy (on an equity basis), which includes solar power, totals 437 MW. Considering the volume of renewable energy sold in 2024, this translates to a Scope 2 greenhouse gas emissions reduction of 61,808 tCO2e, an increase from 51,497 tCO2e in 2023. WHAUP has also set long-term greenhouse gas reduction targets as follows:



Offset from Grid Electricity Consumption tCO2e per year

2024 Performance

61,808

tCO2e



2026 Target

160,000

tCO2e



2029 Target

683,000

tCO2e

WHAUP will remain committed to developing and improving energy efficiency, enhancing production processes, and utilizing advanced technologies such as smart energy management systems to achieve our goals. WHAUP also encourages employees at all levels to participate in energy reduction efforts and continuously evaluates and improves our organizational energy systems. This creates positive impacts, both in terms of cost reduction and long-term environmental sustainability.

4. HIGHLIGHT PROJECTS

OVERVIEW OF ENVIRONMENTAL PROJECTS AND PROGRESS IN REDUCING GREENHOUSE GAS EMISSIONS

WHAUP has leveraged our specialized technologies to develop projects that reduce greenhouse gas emissions—thereby helping to mitigate climate change impacts and safeguard biodiversity, as part of our ongoing journey toward Net Zero emissions, as outlined below:

4.1 ENERGY EFFICIENCY PROJECTS AND INTERNAL GHG EMISSIONS REDUCTION

WHAUP has initiated energy saving projects relevant to utilities and power systems in industrial estates and office buildings as follows:

ENERGY-SAVING PROGRAMS IN INDUSTRIAL WATER PRODUCTION PLANTS

WHAUP recognizes the importance of systematic energy management in the water production process to enhance energy efficiency and reduce energy loss at every stage. To achieve this, the following key approaches have been implemented:

- Assessment of Current Energy Consumption Status to analyze strengths, weaknesses, and opportunities for improvement.

- Implementation of Clear Energy Conservation Policies: Evaluating the energy-saving potential of machinery to identify spaces for efficiency enhancement.
- Setting challenging and tangible energy conservation goals and plans: Developing training programs and activities to promote energy conservation, aimed at enhancing the knowledge and skills of personnel.
- Dedicated and continuous implementation of the action plan: Monitoring and analyzing performance results to align with established targets.
- Continuous system auditing and improvement to foster sustainable development.

WASTEWATER PUMPING SYSTEM IMPROVEMENT PROJECT

WHAUP replaced inefficient wastewater pumps, due to their long operational life, with high-efficiency pumps at the water filtration plant in WHA CIE 1. This initiative resulted in an energy consumption reduction of 108,522 kWh per year, or an estimated greenhouse gas emission reduction of approximately 54 tCO₂e. In 2025, WHAUP plans further energy efficiency development and improvements, including:

- Installing Variable Speed Drives (VSDs) to control high pressure pump motors in the Reverse Osmosis (RO) system. This aims to reduce electricity consumption by optimizing the speed of water pumps to suit the operation of the RO water production system at the plants in WHA EIE, ESIE, and WHA ESIE 1. This is expected to reduce energy consumption by up to 1,263,204 kWh per year, equivalent to reducing greenhouse gas emissions by approximately 631 tCO₂e.
- Replacing machinery in the industrial water pumping system. By replacing older, less efficient machinery with high-efficiency counterparts, WHAUP anticipates reducing energy consumption by 336,094 kWh per year, or approximately 168 tCO₂e in greenhouse gas emissions.

ENERGY SAVING IN OFFICE BUILDING

In addition to implementing energy-saving initiatives within industrial estates, WHAUP has collaborated with WHA Group to fully support energy conservation efforts at WHA Tower and other office buildings in the estates through the “Let’s Save the World Together” campaign. The campaign aims to encourage employees to adopt more energy-efficient behaviors, such as turning off unused electrical appliances, optimizing the use of air conditioning and lighting, and choosing stairs over elevators. These efforts have successfully fostered positive behavioral changes toward energy conservation.

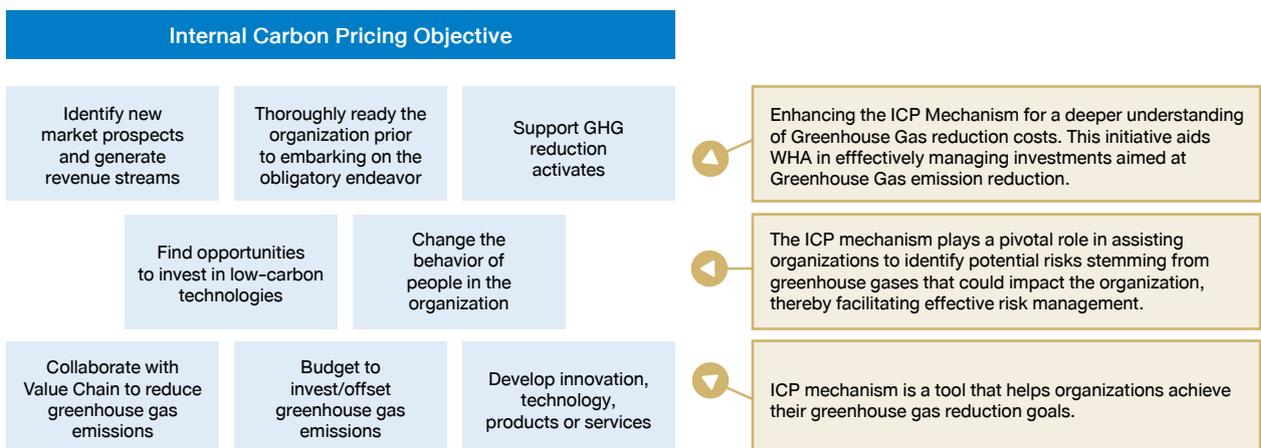
Moreover, in 2024, WHAUP achieved a significant reduction in electricity consumption at WHA Tower through a range of technical improvements. These included optimizing the operation of the building’s cooling water and air replenishment systems, adjusting lighting controls to align with occupant patterns and working hours, and installing energy-saving equipment such as inverters to enhance energy efficiency. As a result of these efforts, electricity consumption was reduced by over 532,191 kWh, leading to an approximate reduction of 265,563 kgCO₂ in greenhouse gas emissions.



INTERNAL CARBON PRICING

WHAUP, in collaboration with WHA Group, has adopted an Internal Carbon Pricing (ICP) mechanism as a core component of our climate strategy to support sustainable greenhouse gas (GHG) emission reduction. This mechanism plays a vital role in identifying GHG-related risks and encouraging investment in low-carbon technologies, as well as the development of innovative products and services that align with future market needs.

In addition, the ICP mechanism helps drive behavioral change among employees and supports effective budget planning for reducing or offsetting our GHG emissions. By enhancing understanding of the financial implications of GHG reduction, the initiative improves risk management and reinforces our capacity to meet our long-term emission reduction targets.



In 2024, we established an Internal Carbon Price (ICP) in the form of a Shadow Price, implemented at a company-wide level. This ICP is flexible and can be adjusted to suit local contexts. The price has been set at 40 baht per metric ton of carbon dioxide equivalent (CO₂e). This serves as a crucial standard for our environmental management and planning, ensuring future sustainability.

4.2 SOLAR ENERGY PROJECT WITHIN WHAUP'S OPERATIONAL AREA

In 2024, WHAUP began a solar panel installation project, starting with pilot projects at the water treatment plants in ESIE and WHA EIE. These projects helped WHAUP reduce electricity consumption from the traditional grid by 1,159 MWh per year, resulting in electricity cost savings of approximately 3.35 Million Baht per year. Also in 2024, WHAUP developed new projects to install solar power generation systems at eight additional water treatment plants, with a total installed capacity of 1.57 MW. These are expected to generate 2,016 MWh of renewable energy per year, reducing reliance on fossil fuels and cutting greenhouse gas emissions by 1,007 tons of CO₂ equivalent (tCO₂e) per year. These projects are scheduled to commence electricity generation in 2025.

For 2025, WHAUP plans to install solar energy systems in over 23 projects, with a combined installed capacity of 1.67 MW. These are projected to generate 2,301 MWh of renewable energy per year, further reducing reliance on fossil fuels and decreasing greenhouse gas emissions by 1,151 tCO₂e per year.

BATTER ENERGY STORAGE SYSTEM (BESS)

WHAUP has implemented a pilot project integrating solar panels with a Battery Energy Storage System (BESS) on the rooftop of a water treatment plant within



ESIE. This initiative aims to enhance renewable energy generation capacity and lessen reliance on the main electricity grid. In 2023, WHAUP installed solar panels with a total installed capacity of 826 kW, coupled with a BESS capable of storing 580 kWh of electricity. This enabled WHAUP to reduce energy consumption from the main grid by 1,150 MWh per year, translating to electricity cost savings of approximately 3.4 million baht per year. Furthermore, the project is projected to reduce indirect greenhouse gas emissions by up to 10,500 tCO₂e over its lifespan.

In 2024, the project successfully generated 963 MWh of renewable energy per year and contributed to an indirect greenhouse gas emission reduction of 481 tCO₂e per year. Looking ahead, WHAUP plans to expand the installation of solar panels to a total capacity of 40,000 kW, alongside BESS installations totaling 24,000 kWh, by 2029. This expansion is expected to reduce electricity consumption by 56,000,000 kWh per year, resulting in approximate electricity cost savings of 195 million baht per year, and an indirect greenhouse gas emission reduction of up to 784,000 tCO₂e over the project's lifespan.



4.3 CARBON EMISSIONS REDUCTION FOR CUSTOMERS



Due to the increasing interests from entrepreneurs in the industrial estates looking to transition to green energy for lower costs and to protect the environment, WHAUP offers the preferred solution of solar rooftop installation service. With our expertise in high engineering and safety standards along with solar rooftop installation, customers believe and trust us to be a part in shifting towards renewable energy.

WHAUP offers an all-in solar rooftop service package for customers at no upfront cost to customers under long-term Power Purchase Agreements (PPAs). The services include design, permitting, installation, and long-term operation and maintenance throughout the contract period. With zero upfront cost, customers can allocate their resources to other areas without concerns about installation or maintenance practices. This helps reduce costs and allows for better resource management in other areas. Additionally, solar power is a cost-effective alternative with less environmental impact compared to conventional fossil fuel-based electricity. WHAUP has integrated solar system solutions for customers to promote the use of clean energy in industrial estates through the following initiatives.



1. SAHA FARM AND GOLDEN LINE BUSINESS PROJECT

The project involves the installation and operation of solar power generation for Saha Farms Co., Ltd. and Golden Line Business Co., Ltd., end-to-end chicken product manufacturers and distributors. This project comprises 14 solar floating solar farm and solar rooftop projects with a combined generation capacity of 46.36 MW in Lopburi and Phetchabun areas. These projects are expected to reduce electricity costs by over 1,600 Million Baht throughout the 14-year Power Purchase Agreement (PPA) term and will help reduce greenhouse gas emissions by over 35,000 tCO₂e per year.



2. KIRIU SOLAR FLOATING PROJECT

The solar power project for Kiriu (Thailand) Co., Ltd., a manufacturer of metal components involved in producing brake discs, brake rotors, and automotive parts, is a solar floating and solar farm project. This project will have a generation capacity of 12.3 MW across a 94,000 square meter pond area, located within Eastern Seaboard Industrial Estate (Rayong) (ESIE). Commercial operation (COD) is expected by June 2025. This will enable Kiriu to reduce energy costs and utilize up to 12.2 million units of clean energy per year. Additionally, it is projected to reduce greenhouse gas emissions into the atmosphere by over 9,800 tCO₂e per year.



3. CANADIAN SOLAR ROOFTOP PROJECT

The solar power project for Canadian Solar Manufacturing (Thailand) Co., Ltd., a solar panel manufacturer, is a solar rooftop project with a generation capacity of 11.986 MW across a 67,000 square meter pond area, located within WHA Eastern Seaboard Industrial Estate 4 (WHA ESIE 4). Commercial operation (COD) is expected by 2025. This will enable Canadian Solar Manufacturing (Thailand) Co., Ltd. to reduce energy costs and utilize up to 16 million units of clean energy per year. Furthermore, it is projected to reduce greenhouse gas emissions into the atmosphere by over 8,000 tCO₂e per year.



In 2024, WHAUP has installed comprehensive solar system for customers totaling 106 MW.

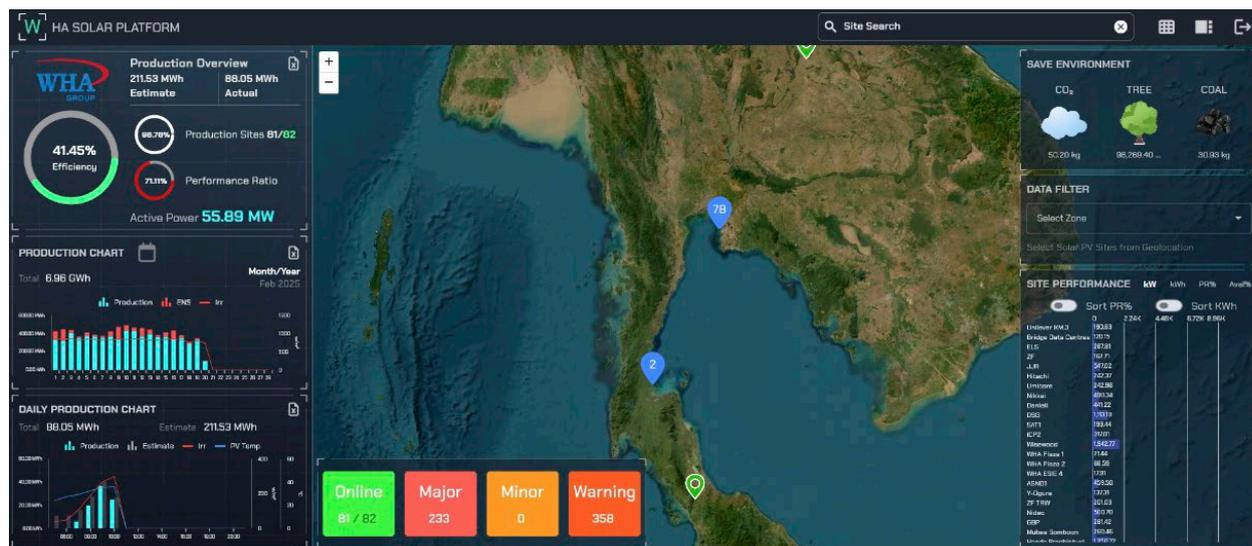


SOLAR AI SYSTEM

WHAUP is dedicated to becoming a leader in delivering comprehensive solar energy system installation services, offering customers modern, high-efficiency solutions. In 2024, we significantly expanded our service portfolio with more than 82 new projects, reflecting the growing trust and confidence of our customers. To enhance service quality, improve operational efficiency, reduce costs, and strengthen competitiveness in the rapidly expanding solar energy market, WHAUP has integrated Artificial Intelligence (AI) technology into our management systems. This integration supports operational control and data analysis through three key components:

- **Solar Monitoring Platform:** This real-time solar energy monitoring and management system enables precise control over energy production, detailed electricity generation data checks, and instant notifications of any anomalies. The key features include:
 - o **Precise energy production control:** Real-time monitoring of electricity generation data to ensure the system operates at peak efficiency.
 - o **Rapid problem detection and resolution:** Immediate alerts for abnormalities, reducing the risk of energy loss.
 - o **Enhanced energy production efficiency:** Data analysis to improve the performance of solar energy systems.
 - o **Efficient energy management:** Optimal planning of energy production and management.

The solar energy performance monitoring platform is designed for ease of use and accessibility from anywhere, allowing convenient and efficient oversight of solar energy systems. With this platform, WHAUP aims to help fully leverage solar energy, enhance energy security, and contribute to building a sustainable future.

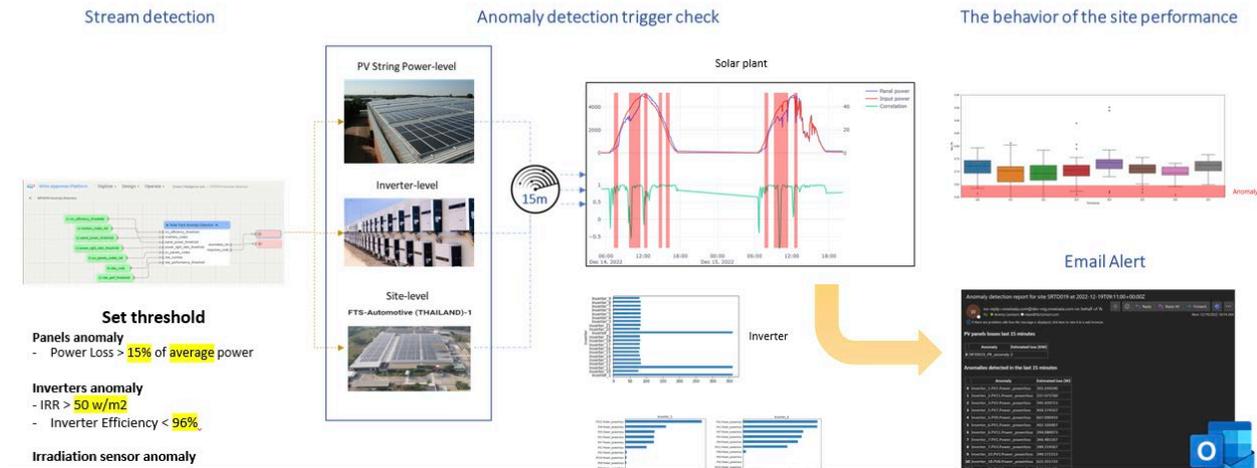


- **AI Anomaly Detection:** This intelligent anomaly detection system has been applied to revolutionize maintenance processes and elevate energy production efficiency to the next level. This system leverages the power of Artificial Intelligence (AI) to collect and analyze data from various energy production projects. This allows for precise and rapid detection of potential anomalies, enabling us to effectively plan preventive maintenance, reduce the risk of system downtime, and promptly address issues before severe damage occurs.
 - o **Prevent System Downtime:** Reduce losses from electricity production interruptions and minimize energy loss caused by system anomalies.
 - o **Extend Machine and Equipment Lifespan:** Increase return on investment and reduce maintenance costs.
 - o **Forecast Future Production Volume:** Analyze data to accurately forecast electricity production volume, allowing for efficient planning of energy procurement and management.

The AI Anomaly Detection system not only enhances operational efficiency but also contributes to the stability and sustainability of energy production systems.

GROUP

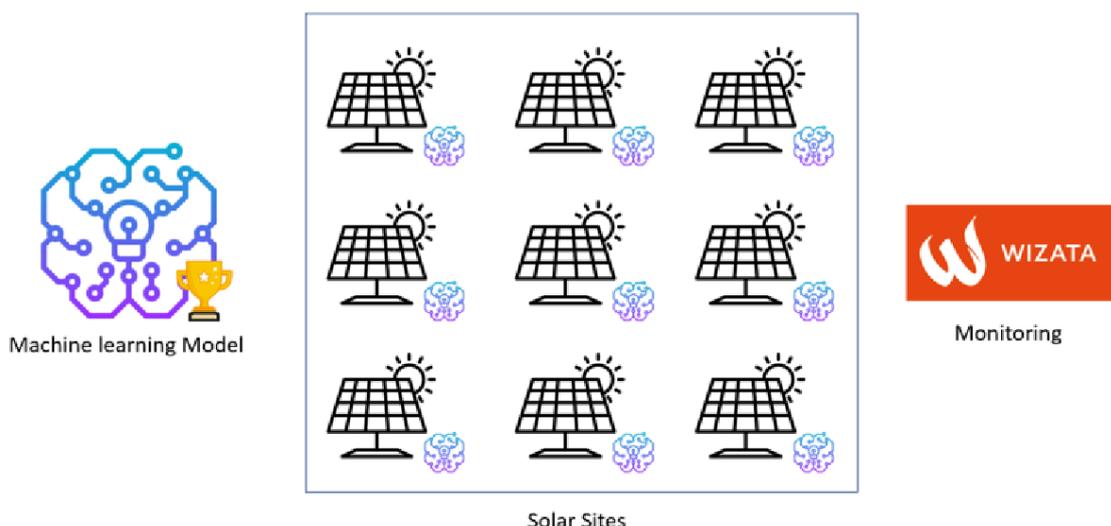
Anomaly Detection Methodology



- **AI Forecasting (AI Forecasting System):** This powerful tool has become instrumental in gaining a competitive advantage and maximizing profitability. The AI Forecasting system possesses the following management capabilities:
 - **Predicting future energy production possibilities:** Analyzing in-depth data to assess long-term energy capacity.
 - **Forecasting electricity production volume:** Accurately predicting electricity production volume, enabling efficient planning of energy procurement and management.
 - **Recommending maintenance activities:** Planning preventive maintenance to reduce the risk of system downtime.
 - **Accurately alerting on future potential damage:** Detecting early warning signs of potential damage to prevent severe harm.

WHAUP is committed to offering advanced AI technology to support the creation of a secure and sustainable energy future.

Deployment & Feedback



RAISING AWARENESS ON ENERGY CONSERVATION



WHAUP recognizes the importance of good and sustainable energy management, understanding that the fundamental basis for driving this strategy lies with every individual within the organization. Therefore, in 2024, WHAUP collaborated with WHA Group to organize training and development activities for personnel on energy management, as follows:

- Energy Conservation Promotion Game and Sports Event: This event, aimed at promoting energy conservation, took place on November 27, 2024, for operational staff from Eastern Seaboard Industrial Estate (Rayong) Co., Ltd., WHA Eastern Industrial Estate Co., Ltd., and WHA Industrial Development PLC. A total of 165 employees participated in the activities.
- Encouraging Employee Engagement in Organizational Environmental Management through Various Projects: This includes a bootcamp project to foster collaboration among employees in developing innovative sustainability projects, providing knowledge to staff through training, and the WHappy project themed “WHappyVerse, Land of Sharing.” This event focused on educating and engaging employees to raise awareness of the importance of sustainability operations.



5. IMPACTS ON STAKEHOLDERS AND ENVIRONMENT

WHAUP recognizes both the positive and negative impacts that may arise on the economy, environment, society, and the human rights of stakeholders. On the positive side, promoting clean energy and energy conservation projects helps reduce energy costs for industries, lowers greenhouse gas emissions, and creates new environmentally friendly business opportunities. At the same time, WHAUP acknowledges that our operations may have negative impacts, such as the consumption of natural resources in energy infrastructure development projects, changes in land use for industrial development, and potential human rights risks within the industrial supply chain. WHAUP has established proactive measures to mitigate these impacts through practices aligned with good governance principles and international sustainability standards.

WHAUP is committed to systematic energy management to address climate change. We prioritize developing and improving energy projects that can respond to environmental challenges and create long-term value for stakeholders. This includes reducing environmental impact, enhancing energy efficiency, and promoting sustainability at both organizational and societal levels.

WHAUP focuses on developing and delivering efficient and environmentally friendly energy projects to our customers. The emphasis is on increasing the proportion of renewable energy use, developing smart energy infrastructure, and leveraging advanced technology to reduce Greenhouse Gas (GHG) emissions. WHAUP promotes clean energy generation and energy conservation projects for customers, such

as solar rooftop systems, energy storage systems, and integrated energy management projects. These initiatives help customers manage energy efficiently, reduce energy costs, and lessen overall environmental impact.

In addition, we implement projects that support the circular economy, enabling customers to reuse energy and maximize the value of energy resources. These operations not only help customers achieve their sustainability goals but also mitigate the impacts of climate change, while supporting the stable and sustainable growth of industry and the economy.

6. NEXT STEP

WHAUP, together with WHA Group, aims to develop and invest in renewable energy projects to enhance business sustainability. WHAUP targets a total renewable energy capacity of 1,200 MW by 2029, which is expected to reduce carbon dioxide equivalent (CO₂e) emissions by 683,000 tons per year. This investment in renewable energy is not only crucial for mitigating environmental impact but also supports WHAUP's expansion in an environmentally friendly and socially responsible direction.

WHAUP will utilize renewable energy to support all our operations, including providing essential power for our water plants. By 2029, WHAUP aims to source 100% of the water plants' total energy needs from renewable energy. This transition to clean energy will boost production efficiency and reduce reliance on unsustainable energy sources, aligning WHAUP's operations with our greenhouse gas reduction targets and contributing to a better environment in the long term.





1. GLOBAL TREND

Biodiversity has increasingly become a critical component of global business strategies, as organizations recognize the profound interconnection between healthy ecosystems and long-term business sustainability. Key trends include the adoption of frameworks that aim to generate positive impacts on biodiversity, such as ecosystem restoration, deforestation prevention, and the promotion of sustainable resource use. Businesses are placing greater emphasis on biodiversity-related disclosures through international standards such as the Taskforce on Nature-related Financial Disclosures (TNFD), in order to manage risks and dependencies related to natural capital. In addition, Nature-based Solutions (NbS), such as reforestation, habitat restoration, and sustainable supply chain practices aligned with environmental objectives, are gaining widespread adoption. Companies are also forming partnerships with environmental organizations, governments, and local communities to jointly implement projects that support global biodiversity goals. These efforts reflect a growing understanding that thriving ecosystems are fundamental to long-term economic resilience and sustainable development.

2. OUR POSITION

WHAUP recognizes the importance of managing biodiversity impacts arising from its business operations, activities, and processes across the

entire value chain particularly those related to the abstraction of water from natural sources. These activities can potentially affect biodiversity, ecosystems, and surrounding natural environments. WHAUP is committed to operating both current and future projects in a responsible manner, aiming to deliver a Net Positive Impact on biodiversity by 2050. As part of this commitment, WHAUP pledges to achieve No Gross Deforestation by 2050, in alignment with the company's overarching goal of reaching Net-Zero greenhouse gas emissions by the same year.

To achieve its biodiversity commitment, WHAUP adopts the Mitigation Hierarchy as its core framework for managing biodiversity-related risks. This approach encompasses four key steps: avoidance, minimization, restoration, and compensation ensuring that any impact from business operations is reduced to the greatest extent possible. WHAUP conducts annual biodiversity risk assessments at all operational sites to ensure that project development does not cause significant harm to critical ecosystems or natural resources. Furthermore, WHAUP places strong emphasis on transparency by aligning its biodiversity disclosures with international frameworks such as the Taskforce on Nature-related Financial Disclosures (TNFD). This commitment reflects WHAUP's responsibility to conserve ecosystems and biodiversity while supporting long-term sustainable business growth.

As a part of our current operations, we strictly adhere to legal requirements and regulations specified in Environmental Impact Assessment (EIA) reports. Additionally, we avoid negative impacts by carefully selecting business sites and implementing appropriate design and construction plans. We have a policy in place to avoid conducting business operations in areas registered by the United Nations Educational, Scientific and Cultural Organization (UNESCO) as World Heritage Sites or protected areas under IUCN Category IV. However, if any business operations areas are in proximity to these conservation areas, WHAUP will undertake measures to mitigate any negative impacts. If the forest resource destruction is unavoidable, WHAUP will compensate for the loss by replanting forests in another area. The compensatory forest plantation must be equal to or larger than the area affected by deforestation. Furthermore, WHAUP implements control measures to reduce other negative impacts, restore any damage resulting from our business activities, and compensate any negative impacts occurred

WHAUP's biodiversity policy also extends to contractors, suppliers particularly Tier 1 vendors that have direct business engagements with the company as well as all other business partners. In cases where partners fail to comply with the policy requirements, WHAUP undertakes timely reviews and investigations to ensure corrective actions are taken. This approach is designed to promote awareness and encourage all contractors and partners to incorporate forest conservation and biodiversity protection into their operations. In addition, WHAUP has established a biodiversity risk assessment process to evaluate potential negative impacts from business activities. The policy is continuously updated to remain aligned with global trends and international best practices.

3. MANAGEMENT APPROACH

3.1 GOVERNANCE STRUCTURE

WHAUP places strong emphasis on the conservation and restoration of biodiversity, recognizing the vital role that balanced ecosystems play in supporting sustainable business operations and generating positive impacts for both society and the environment. To drive this commitment, WHAUP has established a Corporate Governance and Sustainable Development Committee under the oversight of the Board of Directors. This committee is responsible for defining

strategies, policies, and operational guidelines related to biodiversity, with a focus on prevention, mitigation, and restoration of impacts from business activities. It also promotes ecosystem balance through environmentally friendly approaches. Furthermore, the committee actively supports the development and adoption of technologies and innovations that minimize biodiversity impacts such as the use of clean energy, efficient resource management, and the restoration of green areas affected by WHAUP's operations.

To ensure the practical implementation of its biodiversity commitments, WHAUP is supported by the Corporate Governance and Sustainable Development Committee, which delegates responsibility to the Environmental Working Group. This team is tasked with developing and executing the Biodiversity Action Plan, which includes key measures such as the conservation of native plant and animal species, the restoration of ecosystems affected by WHAUP's utilities and energy operations, and the balancing of natural resource use with environmental preservation. The Working Group is also responsible for ongoing monitoring and ecological impact assessments, as well as evaluating the effectiveness of implemented measures. Progress and outcomes are regularly reported to the Committee to inform timely adjustments and ensure compliance with both national and international environmental standards. Additionally, WHAUP conducts annual meetings with WHA Group to align biodiversity-related initiatives across the broader business ecosystem, supporting a unified and effective sustainability approach.

3.2 RISK AND OPPORTUNITIES MANAGEMENT STRATEGY

Biodiversity plays a critical role in the long-term sustainability of WHAUP's operations in the utilities and energy sectors, particularly in relation to dependency-related biodiversity risks. These include the reliance on natural resources such as freshwater and ecosystem services within our operational areas. The degradation or loss of these resources could adversely impact our production processes, service delivery, and operating costs. WHAUP also faces impact-related biodiversity risks stemming from its business activities, including land use changes from energy infrastructure development, waste discharge, and disturbances to local ecosystems. Such impacts can result in increased stakeholder scrutiny, tighter regulatory oversight, and reputational damage.

Nonetheless, biodiversity also presents an opportunity for WHAUP to implement nature-based solutions. These include integrating green spaces within infrastructure design, restoring ecosystems in operational areas, and promoting environmentally friendly products and services. These initiatives not only mitigate long-term risks but also enhance stakeholder trust and reinforce business sustainability. Each year, WHAUP collaborates with WHA Group to assess biodiversity risks in potentially sensitive areas. In 2024, the assessment categorized operational areas into 3 key types:

1. Own Operations

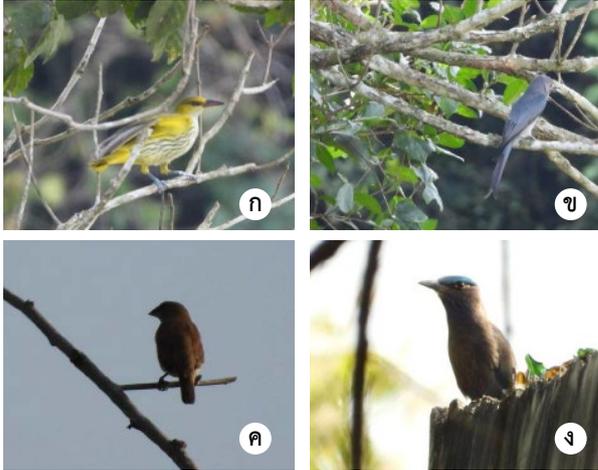
WHAUP’s biodiversity risk assessment clearly delineates the business operational boundaries within WHA’s industrial estates. Business activities are strictly confined within these designated zones to avoid encroachment into surrounding forested areas. Of particular relevance are WHAUP’s operational sites located near the Khao Khiew–Khao Chomphu Wildlife Sanctuary in Chonburi Province. These include WHA Chonburi Industrial Estate 2 (WHA CIE 2), and WHA Eastern Seaboard Industrial Estate 2 (WHA ESIE 2), covering a combined area of over 4,167 rai (approximately 567 hectares). Environmental Impact Assessments (EIAs) have been conducted for these areas and confirm that WHAUP’s activities do not pose any significant impacts on terrestrial or marine ecosystems. In addition, the company has implemented ongoing monitoring plans and actively supports collaborative research efforts with relevant organizations to preserve and protect local biodiversity in the region.

WHAUP regularly monitors local wildlife and biodiversity conditions surrounding its industrial estates. Wildlife species and population data are surveyed biennially to assess ecosystem health in areas adjacent to operations. In addition, the company conducts regular air quality monitoring and supports forest conservation research programs in collaboration with local environmental NGOs and academic institutions. These initiatives explore the impacts of industrial activities on surrounding ecosystems. To mitigate air pollution, WHAUP has undertaken tree planting initiatives particularly of air-purifying species such as *Pterocarpus indicus* (Rosewood) and *Polyalthia longifolia* (Indian Ashoka)-within and around its facilities. The company also enforces strict controls that prohibit the establishment of high-emission industrial plants near the Khao Khiew–Khao Chomphu Wildlife Sanctuary.

WHAUP maintains a strict internal policy prohibiting any form of wildlife disturbance by its employees, including hunting, tree cutting, or any activities



Image showing the surveyed forest area



The birds observed in the forested area include:(a) Black-naped Oriole (*Oriolus chinensis*),(b) Ashy Drongo (*Dicrurus leucophaeus*), (c) Scaly-breasted Munia (*Lonchura punctulata*), and (d) Indian Roller (*Coracias benghalensis*).

that violate environmental regulations or endanger natural habitats. As part of the biodiversity monitoring program, WHAUP conducts comprehensive ecological surveys that cover fauna and flora diversity, species abundance, conservation status, and distribution across wildlife sanctuaries, agricultural zones, community lands, and within industrial areas. These surveys incorporate bioindicator species assessments and plant status evaluations in line with EIA requirements. WHAUP has obtained official permission from the Department of National Parks, Wildlife and Plant Conservation to collect data on wildlife and plant species from November 5, 2024, to June 2025. As of now, the first phase of biodiversity surveys under this initiative has been successfully completed.

In addition, WHAID and WHAUP have conducted studies on aquatic biodiversity such as plankton, aquatic animals, and aquatic plants at WHA Eastern Seaboard Industrial Estate 4 (WHA ESIE 4) and WHA Rayong 36 Industrial Estate (WHA Rayong 36), focusing on canals that receive treated wastewater discharge from the industrial estates. These studies are conducted once a year.

2. Adjacent Area

The Khao Khiew-Khao Chomphu Wildlife Sanctuary is located near industrial estates of WHA and is an area of concern regarding biodiversity. It covers an area of 90,438 rai (14,470 hectares). The focus is on studying biodiversity such as plankton, aquatic animals, and aquatic plants to compare results with established standards, as well as complying with ISO 14001 standards and developing business in alignment with sustainability policies.

3. Upstream & Downstream

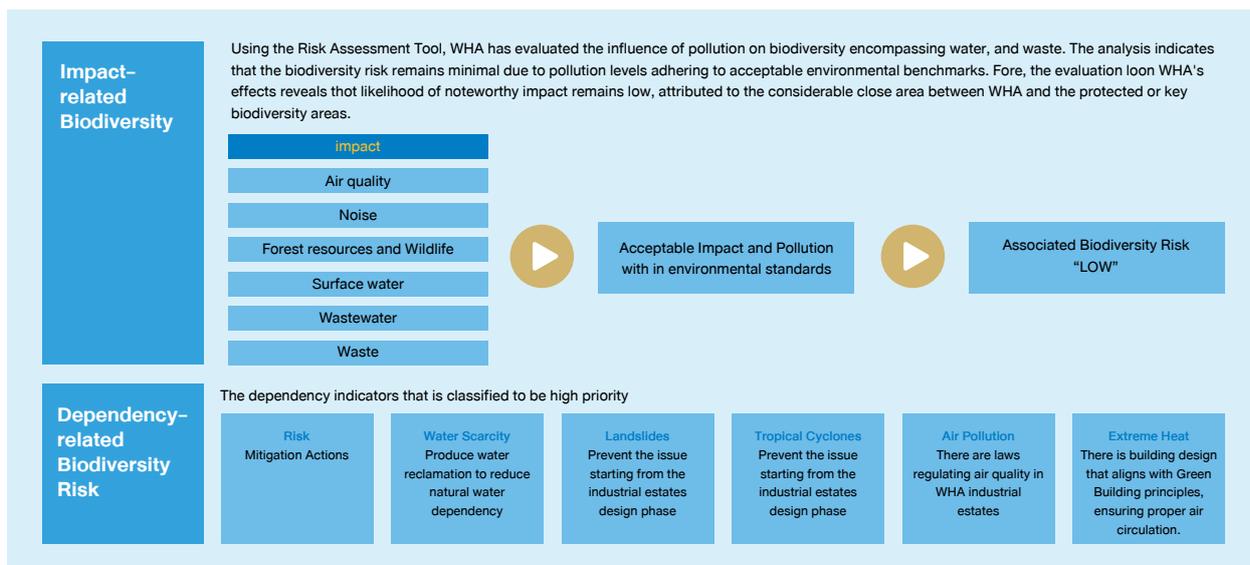
The upstream and downstream areas assessed for biodiversity risk include the aquatic ecosystem canals within WHA Chonburi Industrial Estate 2 (WHA CIE 2), and WHA Eastern Seaboard Industrial Estate 2 (WHA ESIE 2), covering an area of 4,167 rai (667 hectares). WHAUP studies the aquatic ecosystems and has established management plans to monitor biodiversity risks every two years, aiming to balance business development with long-term natural resource conservation.

For the adjacent, upstream, and downstream areas, WHAUP monitors aquatic ecosystems of living organisms in mountain and reservoir areas that receive treated wastewater from the industrial estates. Samples are collected to study biodiversity indicator variables (such as phytoplankton, zooplankton, aquatic animals, aquatic plants, and benthic organisms) and are compared with assessment results. Monitoring is conducted twice a year, from the upstream areas to the downstream points receiving treated wastewater from the projects.

Type of Site	Location	Site	Areas	Exposure	Assessment	Management Plan
Own Operations	Chonburi	WHA Chonburi Industrial Estate 2 (WHA CIE 2)	631 rai or 101 hectares	located near Khao Khiao-Khao Chomphu Wildlife Sanctuary in Chonburi province.	Impact Assessment :EIA • Terrestrial : No impact • Marine: No impact	• Monitoring ambient air quality and provide support for research conducted by local forest conservation organizations or educational institutions on the effects of industrial operations on the ecosystem.
	Chonburi	WHA Eastern Seaboard Industrial Estate 2 (WHA ESIE 2)	3,536 rai or 566 hectares			
Adjacent Area	Chonburi	Khao Khiao-Khao Chomphu Wildlife Sanctuary	90,438 rai or 14,470 hectares	Wildlife sanctuary located near WHA industrial estates that have biodiversity concerns.	A baseline study of each biodiversity parameter (phytoplankton, zooplankton, aquatic animals, aquatic plants, and benthos) was conducted to allow for comparison with monitoring result.	WHA ensures the business development to comply with forest and biodiversity regulations with following tools. • Procedure of Risk Assessment as ISO requirement. • Biodiversity measurement and evaluation of change. • EIA Monitoring report.
Upstream & Downstream	Chonburi & Rayong	Supply chain located in WHA CIE 2 and WHA ESIE 2	4,167 rai or 667 hectares	Aquatic ecology within the canal into which the industrial estate Withdraw water and discharges its treated wastewater.	A baseline study of each biodiversity parameter (phytoplankton, zooplankton, aquatic animals, aquatic plants, and benthos) was conducted to allow for comparison with monitoring result.	Biodiversity risks at are re-assessed every two years, as required by the EIA, to investigate changes and additional impacts caused by industrial developments on forest resources and wildlife.

BIODIVERSITY RISK ASSESSMENT RESULTS

The biodiversity risk assessment in 2024 indicate that the biodiversity index remains within the acceptable standard range. This reflects that there are no significant adverse impacts on biodiversity arising from the industrial estate operations, both in terms of dependency-related biodiversity risks and impact-related biodiversity risks. The assessment confirms that WHAUP’s operations continue to comply with acceptable environmental standards, with biodiversity-related risks classified as “low.” This indicates that the ecological impacts from business activities are effectively controlled and aligned with established environmental requirements. Furthermore, WHAUP has implemented water quality improvement projects aimed at enhancing biodiversity, demonstrating a proactive commitment to ecosystem conservation alongside its operational activities.



3.3 RISK MANAGEMENT

Biodiversity Management Approach

WHAUP has implemented a comprehensive Biodiversity Assessment and Monitoring System to ensure that its operations fully comply with applicable laws and standards. The process is divided into two main stages as follows:



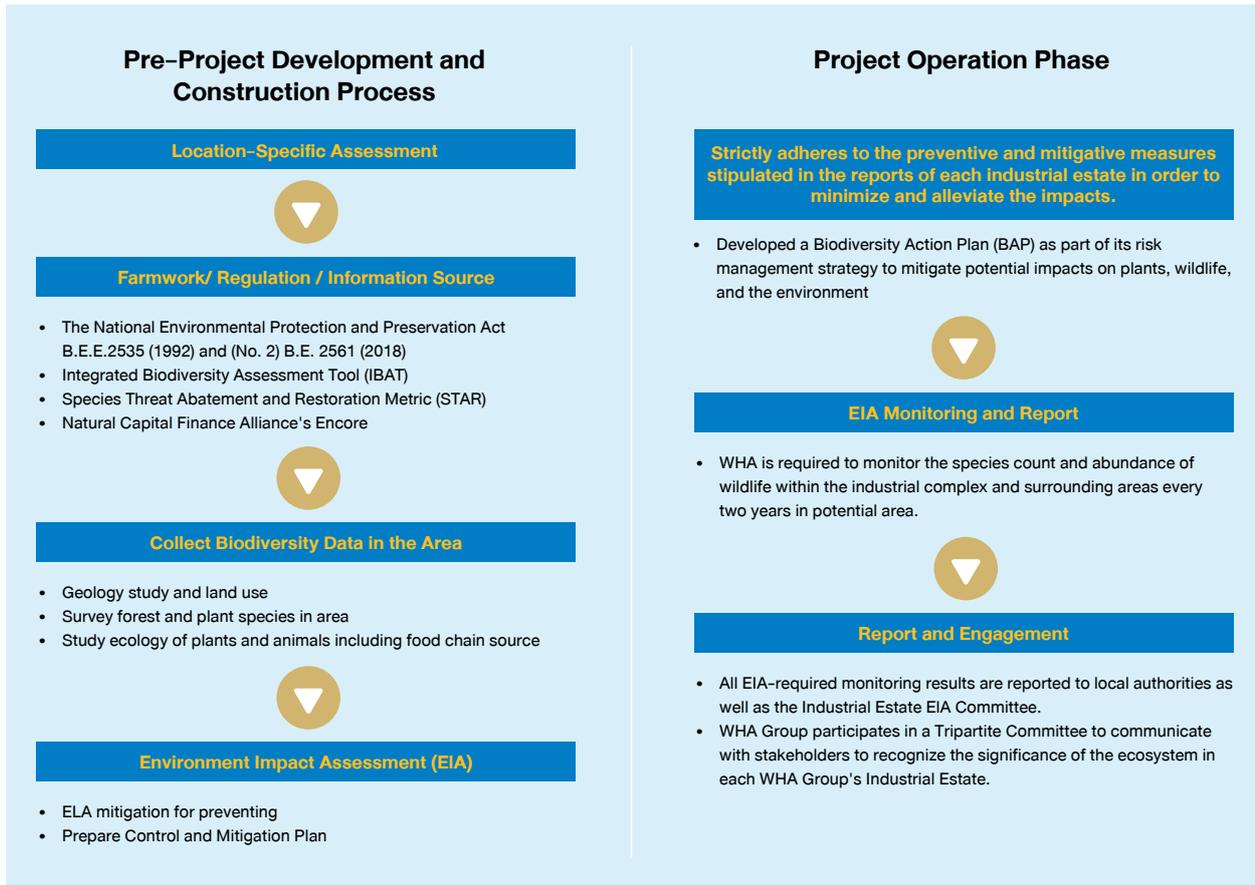
Pre-Project Development and Construction Process

WHAUP conducts location-specific assessments by referencing relevant sources such as the National Environmental Protection and Preservation Act B.E. 2535 and its amendments in B.E. 2561, as well as other biodiversity tools and frameworks like the Integrated Biodiversity Assessment Tool (IBAT) and the Species Threat Abatement and Restoration Metric (STAR).

Biodiversity data in the area is collected through geological and land-use studies, surveys of plant species and forests, as well as ecological studies of plants and animals, including food sources in the food chain. This information is used to carry out the Environmental Impact Assessment (EIA) and to develop mitigation and prevention plans.

Project Operation Phase

WHAUP is committed to implementing preventive and mitigation measures as outlined in the Environmental Impact Assessment (EIA) reports for each industrial estate. In addition, WHAUP has developed a Biodiversity Action Plan (BAP) to manage potential risks to local flora, fauna, and the environment. This includes regular monitoring and reporting (EIA Monitoring and Reporting), such as conducting biennial surveys of species abundance and diversity within the operational areas and surrounding zones. The monitoring results are submitted to local authorities as well as the EIA Committee of the industrial estates. Furthermore, WHAUP actively participates in a tripartite committee to engage stakeholders and raise awareness of the importance of ecosystem conservation within the industrial estates managed by WHA Group.



Biodiversity Action Plan: BAP

WHAUP has developed a Biodiversity Action Plan (BAP), which is one of WHAUP's key risk management plans. Its goal is to prevent and mitigate potential impacts on plants, wildlife, and the environment in all areas where WHAUP operates. The plan is designed to align with the organization's sustainable development guidelines and considers environmental factors at every stage of operation.

Under this Biodiversity Action Plan, WHAUP has established comprehensive measures including the conservation of ecologically important areas, restoration of affected areas, monitoring and

surveillance of ecological changes, and promoting community participation in nearby areas. The plan emphasizes collaboration with stakeholders across all sectors to achieve sustainable long-term outcomes.

The biodiversity action plan has been integrated across all operational areas where WHAUP conducts its business, both within and outside WHA's industrial estates. This integration ensures that operations in every location minimize environmental impacts to the lowest possible level, while simultaneously enhancing the ecological value of the ecosystems within the organization's areas of operation.

To ensure alignment with the established plans and measures, WHAUP, in collaboration with WHA Group, regularly engages external agencies to conduct audits and evaluations of the Biodiversity Action Plan (BAP Audit) across all operational areas. This process is an integral part of the Environmental Impact Assessment (EIA) Monitoring program, with compliance checks conducted every six months. These audits help identify potential issues or gaps, enabling continuous improvement and enhancement of necessary measures to support effective and sustainable operations moving forward.

- Assessing and managing biodiversity through the enforcement of WHAUP’s Environmental Quality, Energy Conservation, and Biodiversity Policy
- Conducting a biodiversity risk assessment in our own operations and critical suppliers to ensure that areas with biodiversity risks are strictly controlled and managed

- Operating business with the highest responsibility in WHAUP’s operational areas and addressing biodiversity sensitivities
- Identify actions to avoid and mitigate negative impacts on biodiversity.
- Applying the Mitigation Hierarchy framework (avoid, reduce, regenerate, restore, transform), starting with avoiding and reducing severe impacts by improving the operations while regenerating and restoring the affected ecosystems as well as addressing the nature loss
- Encouraging community and key stakeholder engagement to improve the efficiency of biodiversity management, emphasizing participation and consultation in related operations
- Collaborating with external partners and biodiversity experts to conserve, restore, and evaluate biodiversity to find the biodiversity management approach to achieve the business commitment to no net loss of biodiversity values.

MITIGATION HIERARCHY FOR REDUCING BIODIVERSITY IMPACTS

WHAUP has adopted a comprehensive strategy for biodiversity conservation based on the Mitigation Hierarchy approach to minimize negative impacts on biodiversity. This approach ensures no net loss and no deforestation. WHAUP has implemented five key measures as follows:

Type	Strategy / Measures
Avoid	<p>To prevent environmental damage, WHAUP prioritizes avoiding activities that may negatively impact nature. Key avoidance strategies include:</p> <ul style="list-style-type: none"> • Commitment to avoid business operations in areas of high biodiversity importance. • Implementing group-wide policies on environmental quality, energy conservation, and biodiversity to manage all types of waste effectively and prevent impacts on ecosystems. • Assessing biodiversity risks and preparing Environmental Impact Assessment (EIA) reports to identify risks and plan mitigation before construction or operations. • Prohibiting operations in UNESCO World Heritage sites or protected areas under IUCN Category IV. • Establishing guidelines for sustainable and clean construction practices.

Type	Strategy / Measures
Reduce	<p>WHAUP is committed to reducing reliance on natural resources through strategies such as improving production processes, designing new products, enhancing product care, developing business models, and engaging suppliers. Key reduction actions include:</p> <ul style="list-style-type: none"> • Developing water recycling systems to reduce dependence on natural water sources and maximize reuse of wastewater. • Constructing green buildings by selecting environmentally friendly materials and avoiding materials that emit volatile organic compounds (VOCs) and asbestos. • Initiating the WeCYCLE project to reduce waste and emissions by recycling PET bottles, paper, and oil into reusable products. • Strengthening cooperation with suppliers to raise awareness about natural resource dependence, helping to reduce environmental and biodiversity impacts across the value chain.
Regenerate	<p>WHAUP commits to regenerating and sustainably developing existing real estate or land with an integrated approach focusing on environmental, social, and economic factors. This includes design, construction, and management of properties and communities to restore natural systems, improve social well-being, and promote economic prosperity. Examples include:</p> <ul style="list-style-type: none"> • Forest conservation projects planting species like Resin tree (Yang Na), Mammea siamensis (Sarapee), Cha-Om, and Saeng Sanab to reduce biodiversity loss in operational areas. • Reforestation in other areas equal or larger in size to those affected by company deforestation. • Establishing biodiversity action plans to guide projects with high biodiversity risk and properly monitor and mitigate impacts.
Restore	<p>WHAUP collaborates continuously with government agencies, private sector, and local communities to restore and enhance forest ecosystems, increasing green space as oxygen producers and community lungs, reducing greenhouse gas emissions, and promoting sustainable business practices in industrial estates. Examples include:</p> <ul style="list-style-type: none"> • Forest restoration projects in green areas around WHAUP's industrial estates to enhance green space and ecosystem integrity. • Increasing oxygen in wastewater before discharge to public water bodies, e.g., installing waterfalls at Eastern Seaboard Industrial Estates 2 & 4 (WHA ESIE 2 & 4) to improve water oxygen levels suitable for aquatic life.
Transform	<p>WHAUP addresses root causes of nature loss by collaborating with partners and pushing strong policies on nature and climate change. Transformation projects include:</p> <ul style="list-style-type: none"> • Collaborating with supply chains and sectors to promote solar power generation to reduce greenhouse gas emissions, such as partnering with the Electricity Generating Authority of Thailand (EGAT) on peer-to-peer energy trading systems and working with PTT Public Company Limited and Certis Company Limited on solar energy trading platforms. • Partnering with leading educational institutions, private companies, and government agencies to establish the Thailand CCUS Consortium to boost competitiveness in CCUS technology. • Promoting transition from fossil fuels to clean energy by using electric vehicles (EVs) and installing EV charging stations powered by renewable energy for employees and customers. • Supporting government projects to achieve climate and nature goals such as carbon neutrality and net zero greenhouse gas emissions through environmental management technologies.

NO DEFORESTATION

In line with the biodiversity guidelines, WHAUP has established a no-deforestation policy which is approved by a dedicated oversight committee annually. WHAUP committed to compensating for deforestation resulting from the operations of WHAUP, tier-1 suppliers, and partners with future reforestation (no net deforestation) which we have successfully achieved. We are currently focusing on our commitment to end all deforestation (no gross deforestation) in our own operations, tier-1 suppliers, and partners by 2050.

Furthermore, WHAUP has developed supporting plans to manage and mitigate risks and impacts in line with the anti-deforestation policy. A monitoring and compliance system has been established to ensure the diligent implementation of the policy and adherence to relevant forestry regulations and/or mandatory standards. The implementation and oversight of these measures are assigned to the Operations Department (IEO) to conduct regular inspections and controls, including reporting on the results. These actions are specified in the Environmental Impact Assessment (EIA) conducted every 6 months.

4. HIGHLIGHT PROJECTS

WATER QUALITY IMPROVEMENT PROJECT TO ENHANCE BIODIVERSITY

Beyond studying water quality to assess impacts on aquatic ecosystems, WHAUP also implements various projects to ensure its water management operations are sustainable, maintain good quality, and do not harm biodiversity, including:

A wastewater rehabilitation project aimed at reducing the volume of wastewater discharged into natural water sources. The amount of wastewater treated in this project is equivalent to the domestic water consumption of approximately 240,000 people per day (based on a consumption rate of 150 liters per person). This means WHAUP can conserve natural soil surface area equivalent to about 32% of the total population in Rayong Province (based on the registered population of 751,000 in 2021).

Additionally, WHAUP has measures to increase oxygen levels in treated wastewater before releasing it into public water bodies, such as installing cascades at WHA Eastern Seaboard Industrial Estate 2 (WHA ESIE 2) and WHA Eastern Seaboard Industrial Estate 4 (WHA ESIE 4). These cascades raise the oxygen concentration in the water to more than 4 milligrams per liter, which helps increase biodiversity in aquatic environments.

TRIPARTITE COMMITTEE MEETING TO FOSTER ENVIRONMENTAL AND ECOSYSTEM AWARENESS

Each year, WHAUP participates in the Tripartite Committee meetings established by the Industrial Estate Authority of Thailand (IEAT) to raise awareness about environmental management and ecosystem conservation within industrial estate areas. This Tripartite Committee was formed under the quality of life measures (covering both social and economic dimensions) outlined in the Environmental Impact Assessment (EIA) reports. The committee comprises representatives from WHAUP, government agencies, local communities, and civil society groups within a 5-kilometer radius surrounding the industrial estates. All three parties collaborate closely to ensure that WHAUP's business operations do not adversely affect the environment, society, or biodiversity. Moreover, the committee supports initiatives that enhance community well-being and the surrounding environment, aligning with WHAUP's long-term sustainable growth objectives.

The Tripartite Committee meetings are held twice annually in accordance with the requirements specified in the Environmental Impact Assessment (EIA) reports. Each industrial estate provides progress reports on the implementation of environmental mitigation and prevention measures, while also discussing key topics related to biodiversity conservation. The meeting agendas include active participation in efforts to reduce biodiversity loss by gathering feedback and suggestions from all stakeholder groups, as well as addressing issues and complaints. The outcomes from these meetings are used to continuously improve environmental measures and policies.



The meeting results are documented in the EIA report submitted to the Office of Natural Resources and Environmental Policy and Planning (ONEP). WHAUP places high importance on continuous monitoring and safeguarding of biodiversity to prevent impacts from business activities. In 2024, meetings were held on September 17 at WHA Chonburi Industrial Estate 2 (WHA CIE 2) and October 27 at WHA Eastern Seaboard Industrial Estate 2 (WHA ESIE 2), emphasizing cooperation among all sectors to achieve tangible results in biodiversity loss reduction.

BIODIVERSITY-RELATED CERTIFICATION PROJECTS

WHAUP has participated in biodiversity-related certification projects through pilot initiatives and systematic implementation. This includes testing and assessing impacts in the early stages and continuously applying the certification system throughout all operational processes. This ensures that all activities positively impact biodiversity and comply with established standards. WHAUP is committed to developing and improving operations to support sustainable development and environmental responsibility across all business dimensions.

WHAUP complies with biodiversity standards, including ISO 14001 certification, which guarantees that business operations do not negatively affect biodiversity. This certification covers all industrial estates of WHAUP in both Thailand and Vietnam.

5. IMPACTS ON STAKEHOLDERS AND ENVIRONMENT

WHAUP's biodiversity management within the utilities and energy business sector delivers significant positive impacts on both the environment and stakeholders. WHAUP implements the Mitigation Hierarchy framework,

encompassing avoidance, minimization, restoration, and compensation measures to maintain ecosystem balance, support natural resource conservation, and prevent degradation of natural areas. Compliance with international standards such as the Taskforce on Nature-related Financial Disclosures (TNFD) further reinforces WHAUP's clear commitment to achieving long-term sustainable development goals.

Regarding stakeholders, WHAUP's efforts to mitigate impacts from its activities play a vital role in preserving the quality of life for local communities and strengthening confidence in the company's social responsibility. These actions reflect WHAUP's commitment to transparent and sustainable management practices. Such initiatives help build trust among customers, partners, and stakeholders, while continuously fostering environmental awareness among employees. With a steadfast commitment to biodiversity management, WHAUP continues to generate positive impacts on both the environment and stakeholders, actively promoting holistic and tangible sustainable development.

6. NEXT STEP

WHAUP is fully committed to responsibly implementing its current and future projects to achieve a Net Positive Impact on biodiversity by 2050, in alignment with the WHA Group's overall sustainability goals. WHAUP also pledges to achieve No Gross Deforestation within the same timeframe. These commitments form a key part of WHAUP's operational strategy, which focuses on sustainable resource management and business development. This approach runs parallel to the target of reaching Net-Zero greenhouse gas emissions by 2050, aiming to establish a sustainable balance between development and environmental conservation.



| WATER MANAGEMENT



1. GLOBAL TREND

Water management is a critical factor in both national development and business operations. Water is not only a vital natural resource for human life and ecosystems, but it also plays a pivotal role across agriculture, industry, and public services. However, increasingly severe climate change has intensified water-related challenges such as droughts, floods, and limited access to clean water which threaten economic growth and public well-being.

In response, the current trend in sustainable water management focuses on leveraging technology and innovation to address these emerging challenges. Organizations and industries are increasingly adopting digital solutions such as smart sensors and Artificial Intelligence (AI) to monitor water quality, forecast demand, and minimize water losses throughout production systems. At the same time, the water circular economy approach is gaining prominence, emphasizing water reuse and recycling in industrial processes and utilities to improve efficiency, reduce wastewater generation, and mitigate environmental impacts. Building water resilience is also essential, involving the development of infrastructure that

can withstand climate variability, such as reserve water storage systems, flood defenses, and the integration of renewable energy into water treatment processes. In parallel, inclusive and participatory water management is being promoted to encourage collaboration among government agencies, the private sector, and communities ensuring equitable access to water and fair allocation across all users within a shared watershed.

WHAUP recognizes the critical role of water as a key resource that influences business success, economic progress, environmental health, and social equity. The company is committed to responsible and efficient water use in line with the principles of sustainable development. This includes ensuring the availability of water for domestic, commercial, and industrial needs, while respecting the rights of all stakeholders along the water value chain. This commitment drives WHAUP to continuously enhance its water management systems, secure alternative water sources, and treat wastewater to meet environmental standards before discharge. These actions reflect the company's mission to support economic growth while safeguarding natural resources and ecosystems for future generations.

2. OUR POSITION

As a utility service provider within industrial estates, WHAUP recognizes the critical importance of water as a core resource for its business operations one that directly impacts the economy, society, and environment. Accordingly, the company places strong emphasis on efficient water management while enhancing modern problem-solving capabilities to ensure long-term sustainability. WHAUP has integrated digital technologies and innovations to optimize water management processes, reduce dependence on natural water sources, and minimize the discharge of wastewater into the environment.

In alignment with the principles of the Water Circular Economy, WHAUP focuses on water reuse and recycling across its operations and utility systems. The company has developed a water reclamation system to improve the efficiency of water resource utilization. Additionally, WHAUP has constructed water reservoirs both within and beyond WHA's industrial estates to serve as backup water sources. These initiatives help decrease reliance on natural water bodies such as reservoirs and canals, which are vital to surrounding communities and ecosystems. At the same time, WHAUP maintains stringent oversight of its water sourcing practices to ensure that water is not drawn from water-stressed areas or regions at risk of long-term water scarcity.

In addition to its success in reclaiming wastewater and securing alternative water sources for its industrial estates, WHAUP the utility arm of the WHA Group has expanded its water reuse system beyond WHA's industrial estates. In 2024, the company successfully implemented wastewater reuse within the Asia Industrial Estate, reinforcing its role as a leading provider of utilities and facilities in industrial zones. This achievement aligns with WHAUP's long-term strategy to continuously develop its utilities and energy business. The company is pursuing service area expansion across all four WHA's industrial estates and special economic zones, as well as in other areas, in line with the Circular Economy principle that underpins its mission to become a leader in water management within industrial estates.

Moreover, in the past year, WHAUP initiated a study on water footprint analysis to assess the impact of water use across each stage of the supply chain and to formulate strategies for efficiently reducing water extraction from natural sources. Currently, 6.9% of WHAUP's total water sales come from reclaimed wastewater, a clear reflection of the company's efforts to promote sustainable water usage in local communities. This milestone represents a critical step toward balancing economic growth with long-term environmental stewardship.



3. MANAGEMENT APPROACH

As a utility service provider within industrial estates, WHAUP recognizes the potential impacts its operations may have on natural water sources and surrounding communities economically, socially, and environmentally. Consequently, WHAUP places strong emphasis on efficient water management to meet the demands of industrial operators within its estates, while also promoting the sustainable use of water resources in nearby communities. This approach ensures equitable access to water for all stakeholders, mitigates the risk of conflict, and supports balanced and fair water allocation.

3.1 GOVERNANCE STRUCTURE

WHAUP places great importance on a systematic and sustainable approach to water management, with a strong focus on the efficient use of water resources alongside the application of technology and innovation in operations to align with the organization’s sustainability goals. Water management is overseen by WHAUP’s Board of Directors, which sets policies and strategic directions. The Chief Operating Officer (COO) is responsible for implementing these strategies and integrating technology to enhance efficiency across all processes.

Roles	Responsibilities
Chief Operating Officer	Responsible for overseeing water management and technological infrastructure across WHAUP. This includes planning, developing, and implementing digital technologies to enhance operational efficiency, reduce costs, and promote the efficient use of resources. The COO also leads the technology and innovation working group and supports the development of advanced technology-based products and services to meet customer needs and strengthen WHAUP’s competitive capabilities.
Board of Directors	Plays a critical role in long-term strategic planning and governance of WHAUP’s water management initiatives. Responsibilities include monitoring the performance of relevant working groups, assessing the impacts of policy implementation, and defining continuous development strategies to ensure effective water management practices that align with sustainable development principles.

3.2 RISK AND OPPORTUNITIES MANAGEMENT STRATEGY

WHAUP recognizes the importance of sustainable water management, as water is a critical resource that directly impacts operating costs, business continuity, and stakeholder relationships. Effective water management not only mitigates external risks such as climate change and increasingly stringent legal requirements but also creates opportunities to develop innovations and services.

Risks	Opportunities
Water scarcity resulting from droughts or the impacts of climate change may adversely affect production processes and increase costs associated with securing backup water sources. This could impact business operations and result in missed market opportunities if water cannot be sourced in time, or if the associated costs rise significantly. Additionally, competition for water resources between industries and local communities is another issue that could lead to conflicts, damaging the organization’s reputation. Furthermore, stricter legal requirements related to efficient water usage and wastewater treatment will likely increase the burden of compliance and raise capital expenditures for the necessary infrastructure.	WHAUP can leverage digital technologies, such as real-time water usage monitoring systems, using Artificial Intelligence (AI) to calculate water consumption and reduce water loss in production processes efficiently. Such technologies can significantly enhance water resource management and reduce the cost of securing backup water sources. WHAUP also plans to implement circular economy principles, including water reuse and recycling, through water reclamation systems, which reduce the need for raw water and improve the efficiency of water usage. Additionally, WHAUP is considering innovative water production technologies, such as seawater desalination, to address water scarcity caused by droughts or the effects of climate change. Furthermore, WHAUP can expand its offerings of efficient water solutions to customers and local communities, such as providing clean water in water-scarce areas or managing water for diverse uses. These initiatives will help enhance investor and business partner confidence in the long term.

3.3 RISK MANAGEMENT

WHAUP focuses on the development and maintenance of infrastructure, including water production and wastewater treatment systems, to comply with established standards. This approach helps mitigate environmental impacts and reduce reliance on natural water sources. Water used in production is sourced from natural bodies of water as well as external water sources to be processed and distributed for sale within industrial estates, in addition to managing water quality throughout the production process. Water management at WHAUP is critical in reducing the environmental impact of water usage in various processes within the industrial estates. This includes efforts to control water loss and develop backup water sources, such as constructing water reservoirs, ensuring efficient water use, and reducing the risk of water shortages.

Additionally, WHAUP's Environmental Committee is tasked with setting guidelines and action plans for water management. The committee promotes involvement from both management and staff through process controls aimed at reducing water loss, alongside the development of water reclamation systems. These systems allow the reuse of water resources in production processes, thus reducing dependence on natural water sources and enhancing the sustainability of water use.

WHAUP's water management efforts are conducted in close collaboration with the Industrial Estate Operation (IEO) division of WHA Group to enhance water resource quality and mitigate potential adverse impacts on surrounding natural ecosystems and the environment. At the same time, emphasis is placed on wastewater quality management by treating effluents to meet standards set by the Ministry of Industry, the Industrial Estate Authority of Thailand (IEAT), and the Ministry of Natural Resources and Environment. Wastewater from factories within WHA's industrial estates is conveyed to the central wastewater treatment plants within the estates. The treatment process ensures that the water meets the quality standards as stipulated in the Environmental Impact Assessment (EIA) reports and notifications from the Department of Industrial Works. Subsequently, treated water is either discharged into external water bodies or recycled for reuse within

the industrial estates to reduce reliance on natural water sources, thereby promoting water resource sustainability while safeguarding the environment and the quality of life in surrounding communities.

WATER MANAGEMENT POLICY AND PRACTICES

WHAUP, in collaboration with WHA Group, has established the Environmental Quality, Energy Conservation, and Biodiversity Policy, focusing on comprehensive environmental management, particularly water management. Water management has been designated as a key agenda item in quarterly executive meetings to ensure that environmental initiatives remain up-to-date, aligned with current circumstances, and set challenging yet achievable water management targets.

In line with this policy, WHAUP has defined guidelines and operational frameworks emphasizing efficient water balance management. The company is committed to maximizing water resource utilization and benefit. The water management policy covers both reducing water consumption and enhancing water resource management efficiency within the organization, consistent with sustainable development principles. In 2024, WHAUP successfully reused over 7.8 million cubic meters of treated wastewater.

Moreover, WHAUP prioritizes minimizing water loss within its systems, especially leakage reduction across all processes from production to water distribution to optimize water use, reduce environmental impacts, and improve operational efficiency. Advanced technologies and innovations have been applied systematically to detect and monitor leaks, enabling rapid and effective response. In 2024, WHAUP managed to reduce water leakage by more than 600,000 cubic meters.



THE APPLICATION OF TECHNOLOGY IN WATER MANAGEMENT

WHAUP is committed to efficient water resource management through comprehensive operations covering water sourcing, industrial water production, wastewater treatment and reuse, as well as minimizing water loss in production and distribution systems. The objectives are to reduce risks, ensure compliance with relevant regulations, and mitigate tangible impacts on local communities.

To achieve these goals, WHAUP continuously incorporates technology into water management, such as employing advanced water source exploration technologies to reduce reliance on surface water. Additionally, innovations in wastewater treatment processes have been developed. Currently, the reclaimed water production capacity reaches 35,320 cubic meters per day, with plans to increase to 60,400 cubic meters per day (approximately 21 million cubic meters per year) by 2027, and a long-term target of 25 million cubic meters per year by 2029. This expansion will significantly reduce dependence on natural water sources.

Another key approach is leveraging smart systems to enhance operational efficiency. For example, the RO Performance Prediction project uses AI to monitor and predict membrane fouling, reducing maintenance costs by up to 20%. The use of EPANET software for leak detection and monitoring in pipeline networks helps minimize water loss and optimize water resource management.

Furthermore, WHAUP is advancing digital utility services in partnership with WHA Group, transforming traditional water management into a digital system. This includes real-time monitoring and control through SCADA, providing fast and accurate data, and the establishment of a Unified Operation Center (UOC) at WHA Tower headquarters, enabling executives to monitor and command operations centrally. The Smart Utilities Solution project at WHA EIE Industrial Estate in Map Ta Phut replaces conventional equipment such as water pumps and flow meters with intelligent devices.

In a broader scope, WHAUP is progressing towards becoming a Tech-Driven Organization by 2025 through the “WHAUP Intelligence Platform,” which enhances the accuracy and efficiency of digital as-built drawings for wastewater management systems. The platform incorporates GIS hydraulic modeling, smart metering, OCR technology for image-to-data conversion, automatic meter reading (AMR), pressure transmitters, and integrated data systems to ensure precise and sustainable water management. An investment budget of 14 million THB has been allocated for projects under this platform.

The commitment to integrating innovation and technology throughout all phases of water resource management not only improves efficiency and reduces costs but also creates added value for WHAUP and industrial customers seeking modern and sustainable utility solutions.



WATER RECLAMATION PROCESS, INPUT REUSE, AND PRODUCT REUSE

The development of a water reclamation system is a strategic approach to reducing direct dependence on natural water resources and maximizing the beneficial reuse of treated wastewater. This method has been adopted by WHAUP as an alternative water production solution to support truly sustainable development, particularly in the Eastern Economic Corridor (EEC). The project integrates conventional technologies with new innovations to enhance the value of wastewater by converting it into high-purity water suitable for industrial use. Through the transformation of treated wastewater into demineralized water by removing various minerals this reclaimed water meets the high-purity standards required by industries such as power generation, petrochemicals, and electronics.

Additionally, WHAUP produces premium clarified water, a type of industrial water with superior quality compared to general industrial water, using advanced membrane technology. This water is primarily supplied to the power generation sector. This initiative not only reduces production costs but also enhances the market value of the product, thereby reinforcing sustainability in related industries.

WHAUP has set a target to double its water production capacity from treated wastewater from 30,200 cubic meters per day in 2020 to 60,400 cubic meters per day by 2027. As of 2024, WHAUP's water production capacity reached 35,320 cubic meters per day, generating revenue of 302.3 million Baht from the Water Reclamation project, accounting for 12% of total revenue and profit share from utility businesses, up from 9.5% in 2023. This approach to reusing treated water has enabled WHAUP to reduce the use of

natural water sources by 7.8 million cubic meters in 2024, representing 10% of total water consumption. Therefore, the project significantly benefits both the environment and society by reducing wastewater discharge, minimizing water extraction from natural sources, conserving natural resources, and mitigating potential conflicts with nearby communities that rely on the same water sources.

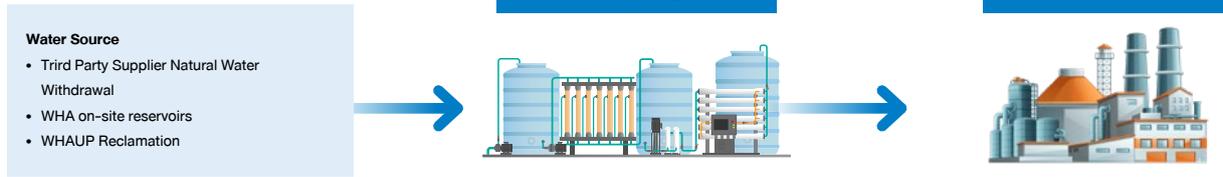
WATER USAGE AND WATER MANAGEMENT

WHAUP sources water from two primary sources: natural water bodies (such as public rivers and WHAUP's own water reservoirs) and direct purchases from raw water suppliers. These sources are thoroughly verified for origin and quality in accordance with established standards. The water is used in production processes or supplied to customers across various industries. However, to ensure sustainable water management and reduce reliance on natural water sources as well as raw water purchases, WHAUP has constructed water storage ponds both inside and outside its industrial estates. These serve as reserve water sources and help minimize dependence on natural sources.

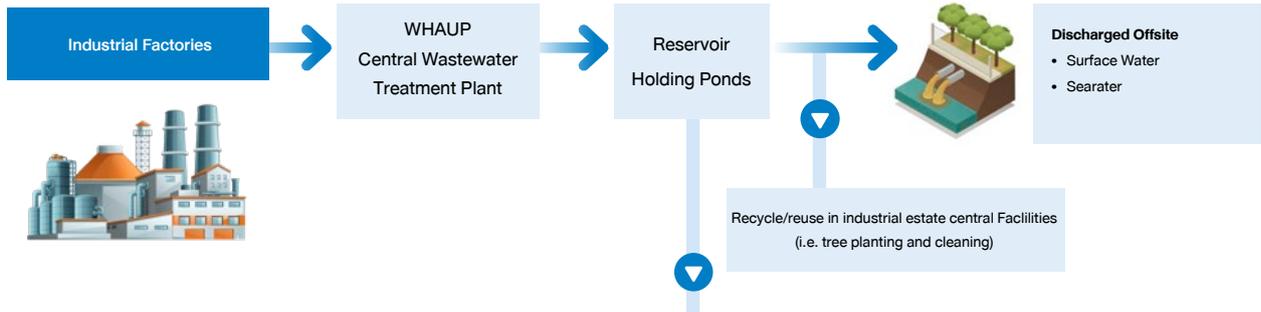
In addition, WHAUP implements wastewater reuse measures by treating used water through centralized wastewater treatment ponds using Reverse Osmosis (RO) technology, which filters and purifies the water for reuse in production processes. Biological treatment methods are also employed, with the objective of ensuring that the quality of discharged water meets environmental standards before being returned to natural water bodies. This ensures no adverse impact on the environment, public health, or surrounding natural resources. Strict monitoring is conducted to ensure compliance with all prescribed effluent quality standards.

Reverse Osmosis : RO

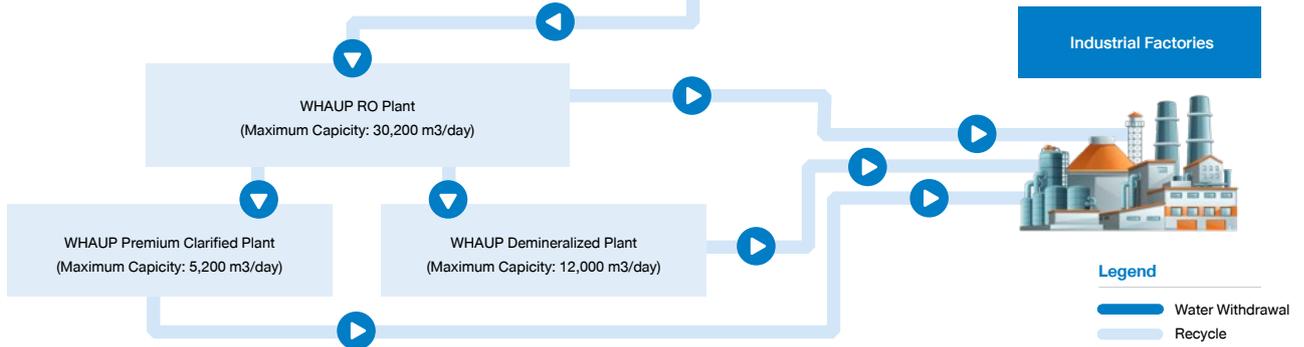
Industrial Water



Wastewater Treatment



Reclamation Water



Treat and Reuse Wastewater via Reverse Osmosis (Ro)

Beyond managing its own water resources, WHAUP also provides wastewater treatment services to other industrial estates, tailored to meet the specific industrial processes of each client. These include various treatment technologies such as Activated Sludge (AS), Aerated Lagoon (AL), and a Hybrid Rotating Biological Contactor (Hybrid-RBC) system a combination of the traditional RBC system and Activated Sludge-which offers higher efficiency in treating wastewater with elevated Organic Loading Rates (OLR).

In addition, WHAUP utilizes a Vertical Flow Constructed Wetland system, which has been in use since 2003. This nature-based solution has not only contributed to internal operations but has also been extended to benefit surrounding communities. Through the Clean Water For Planet initiative, WHAUP shares knowledge and best practices in wastewater treatment with local residents, helping them enhance their treatment efficiency, apply proper techniques, and plan suitable budgets. This program aims to promote and expand access to effective wastewater treatment beyond WHAUP's external individuals.

After wastewater treatment in centralized wastewater treatment plants, WHAUP conducts quality assessments of the water according to standards set by the Ministry of Natural Resources and Environment, the Ministry of Industry, the Industrial Estate Authority of Thailand, and Environmental Impact Assessments (EIA) before discharge. This

ensures no adverse environmental effects. In 2023, all indicators remained within the standard criteria set. Furthermore, the water sources from which water was released have been verified not to be densely populated residential areas, and the residents there do not rely on water from these sources for their daily lives. Additionally, the water sources supporting wastewater discharge from industrial estates have been assessed since the industrial estate's EIA process, confirming their capability to discharge wastewater without adverse environmental impacts. The impacts of water on all stakeholders, including communities, customers, and contractors, are measured annually through engagement processes to identify impacts resulting from WHAUP's operations. The outcomes of this engagement are used to improve future operations, including planning mitigation measures for those affected by actual impacts, to restore their confidence that everything will return to its original state.

In 2024, WHAUP received one suggestion from stakeholders regarding the water production process. This suggestion was aimed at improving production efficiency, helping WHAUP enhance its operations. WHAUP has conducted quality reviews and continuously implemented measures to improve quality monitoring, aiming for better service and the highest level of satisfaction for all stakeholders.

WATER RISK ASSESSMENT

WHAUP, in collaboration with WHA Group, continuously conducts water risk assessments and cost evaluations to enhance preparedness and response planning. In 2024, the total cost associated with water-related risks including costs for securing alternative water sources, wastewater treatment, and regulatory compliance was estimated at approximately THB 140 million. In response, the company has implemented mitigation measures through investments in water infrastructure and the development of efficient water use strategies.

Moreover, WHAUP places strong emphasis on research and development (R&D) to address water-related risks. In 2024, the company allocated a budget of approximately THB 3 million to develop water management technologies. These include the adoption of digital systems for water data monitoring and analytics, the advancement of water reuse technologies, and the exploration of sustainable alternative water sources. These efforts aim to reduce dependence on natural water sources and enhance long-term water security.



WHAUP OPERATION IN IN WATER-STRESSED AREAS

WHAUP recognizes the importance of water resources to all stakeholders and has prioritized efficient water management to address current and future water challenges. Therefore, WHAUP has conducted a water risk assessment in areas prone to water scarcity (Water-Stressed Areas) using the Water Tools (Aquaduct), a standard tool to analyze and assess proactive water-related risk factors. The risk assessment results can be categorized into the following main issues:

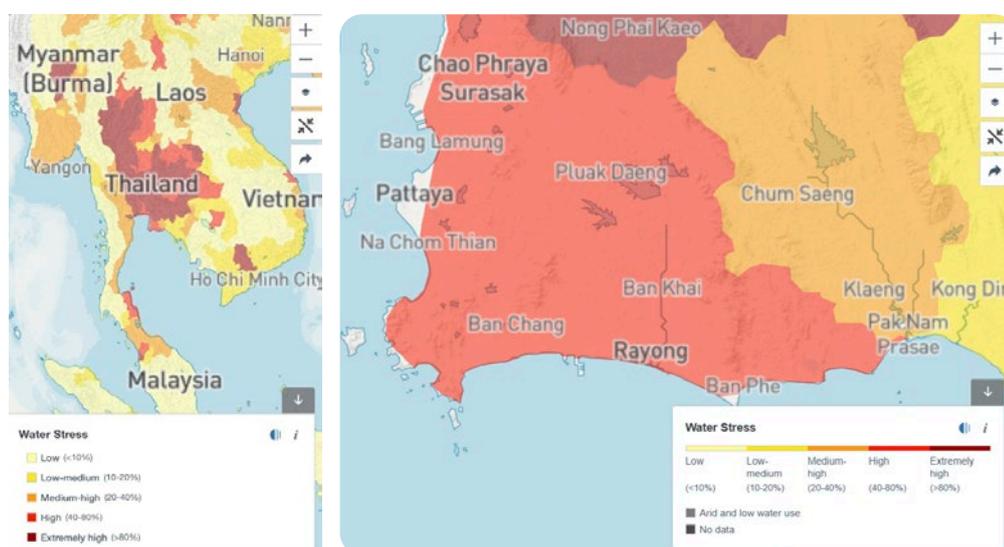
- Extreme High Water Stress
- High Water Stress
- No Water Stress

After conducting the risk assessment, WHAUP identified areas that may be affected by water scarcity issues, enabling efficient water resource management, reducing potential operational risks, and minimizing impacts on communities and the environment. The 2024 assessment revealed industrial estates of WHAUP facing the following risks:

Type	Number of industrial estates	% of industrial estate in water stressed location
Extreme High Water Stress	1	8%
High Water Stress	12	92%
No Water Stress	0	0%
Total	13	100%

To ensure efficient operations in water-stressed areas, WHAUP has implemented strategies to engage stakeholders in the operational areas through regular meetings, listening to community feedback, developing water conservation projects, and joint water resource management initiatives. These efforts aim to create a balance in the shared use of water resources. This approach helps prevent and reduce potential conflicts while fostering long-term cooperation between the business sector and communities. Additionally, WHAUP continuously monitors and evaluates the water situation using data from various organizations, including:

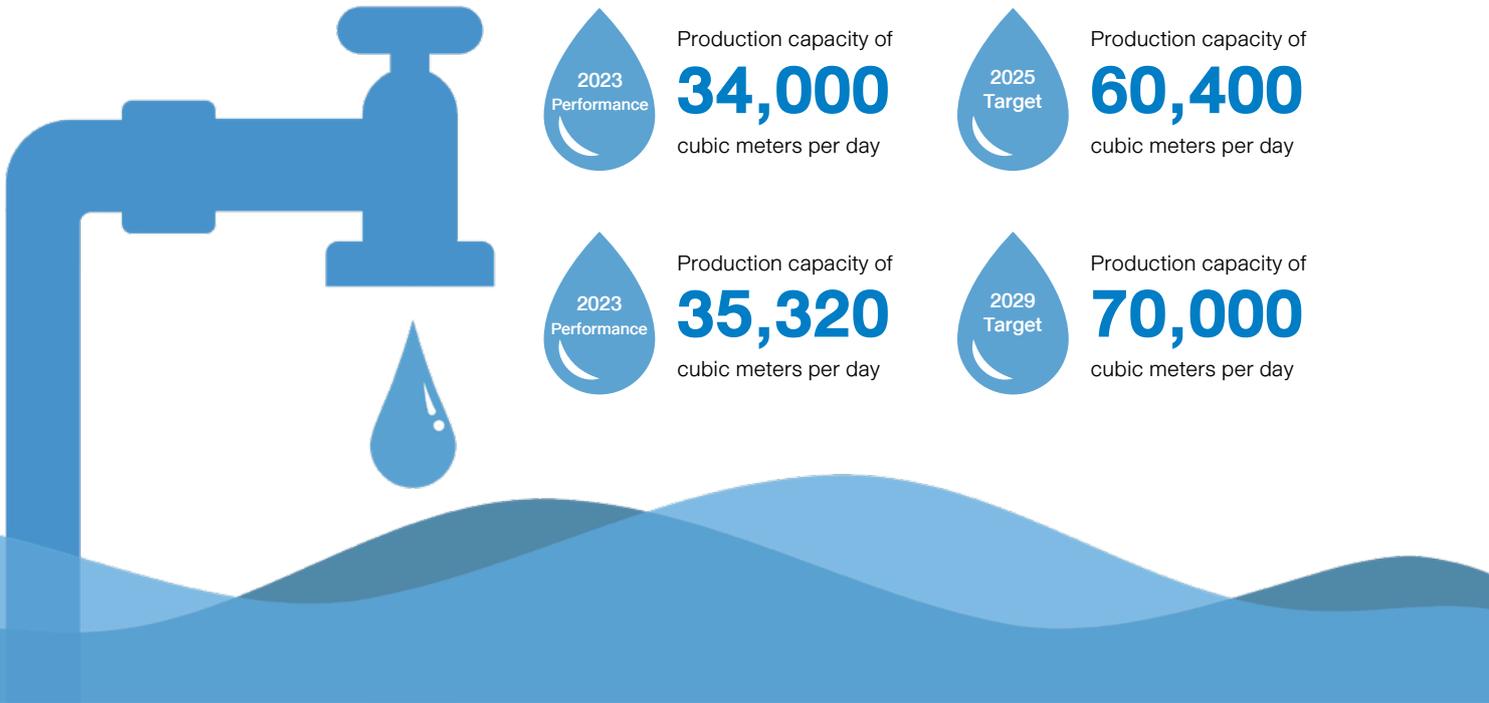
- Meteorological data on weather and rainfall in Thailand from the Thai Meteorological Department.
- Water situation data from reservoirs in the Eastern Economic Corridor (EEC) area, derived from the four major dams in the Chao Phraya Basin in central Thailand, using data from the Royal Irrigation Department. WHAUP also has a Business Continuity Plan (BCP) in place to manage potential water scarcity situations in various areas of its industrial estates.



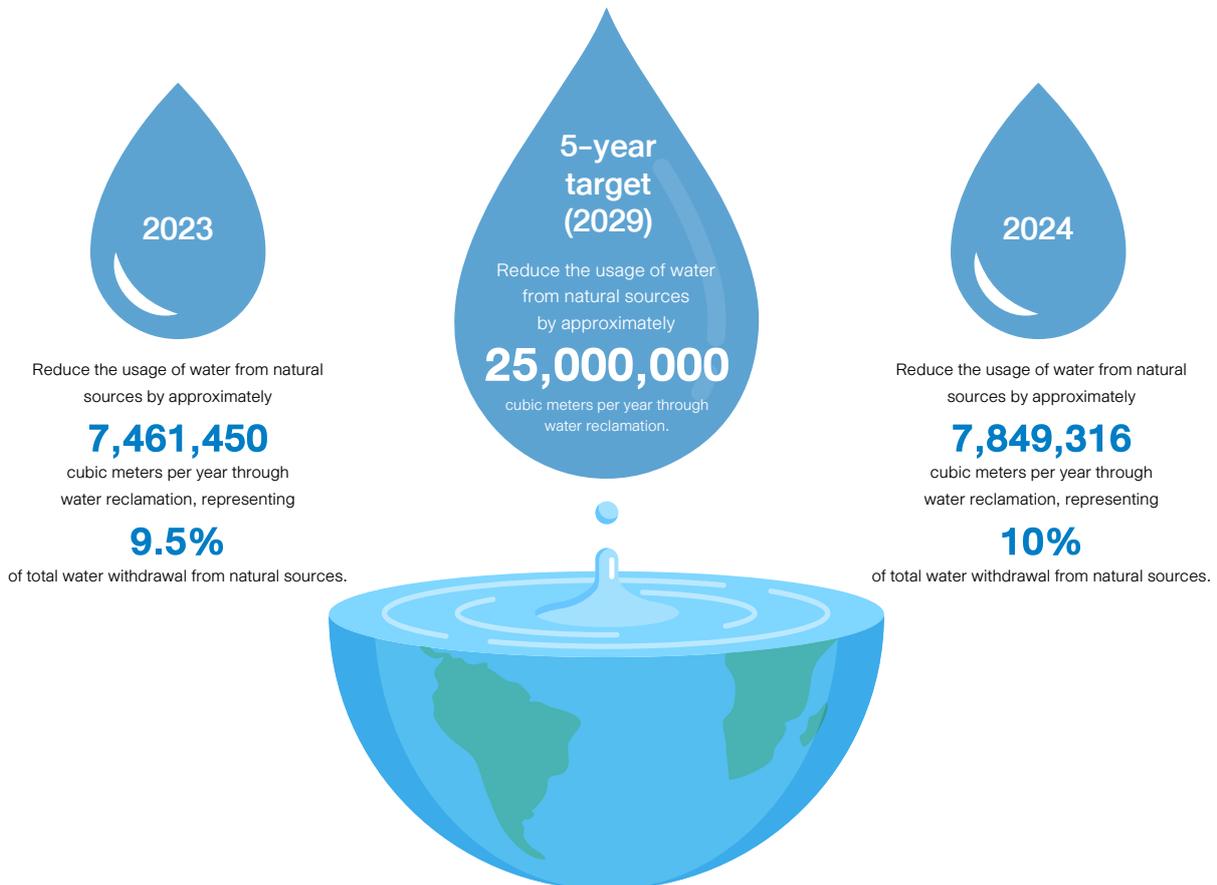
The image shows a standard tool used to analyze Water-Stressed Areas using Water Tools (Aquaduct).

3.4 METRICS AND TARGETS

WHAUP has set a target for expanding the production capacity of its water reclamation projects, which involve the reuse of treated wastewater for industrial purposes.



The reduction of water usage from natural sources



4. HIGHLIGHT PROJECTS

In 2024, WHAUP continued to place strong emphasis on sustainable and efficient water management, aiming to optimize the use of water resources while minimizing environmental impacts. This approach not only enhances water use efficiency but also reflects WHAUP's commitment to social and environmental responsibility toward local communities and other stakeholders. During the year, WHAUP initiated several water management projects, including the continuation of existing initiatives as well as the development of new ones currently under study. These projects are designed to meet the growing and diverse water demands and to further improve water resource management efficiency across all sectors of the organization in a sustainable manner.

DEMINERALIZED RECLAIMED WATER: THE REAL SUSTAINABLE RESOURCE FOR FUTURE DEVELOPMENT

WHAUP has invested in the Demineralized Reclaimed Water project to produce demineralized water with the aim of enhancing the quality of water treated from wastewater systems, enabling it to be reused as high-quality industrial water effectively, with reduced costs and environmentally friendly processes. This project addresses the demand for industrial water in a wide range of sectors.

The Demineralized Reclaimed Water project has been developed as an alternative water source that plays a crucial role in supporting sustainable industrial growth in the country. It combines existing technologies with new innovations to enhance product value. By improving the quality of wastewater from treatment systems to produce mineral-free industrial water, the water is supplied to various industrial operators to support efficient and sustainable water resource usage.



Currently, the project includes two production facilities:

1. A Demineralized Reclaimed Water plant at WHA Eastern Industrial Estate (Map Ta Phut) (WHA EIE) with a production capacity of 12,000 cubic meters per day.



2. A joint venture with Asia Industrial Estate, with a production capacity of 2,200 cubic meters per day.



Together, these two projects have a total production capacity of 14,200 cubic meters per day, covering 3% of the total industrial water production capacity.

To date, the Demineralized Water system has helped WHAUP reduce external water usage by approximately 7.8 million cubic meters per year, saving about 91 million THB annually in raw water procurement costs.

The implementation of this project has led to positive impacts on industrial development in several ways:

1. Significantly reducing the amount of wastewater released into the environment.
2. Reducing the government’s investment budget for developing water storage and delivery infrastructure.
3. Reducing conflicts between communities and industries over water resource allocation.
4. The industrial sector gains access to high-quality water products at competitive costs.
5. Industrial operators within WHAUP’s industrial estates receive comprehensive utility services and a wide range of products.

Furthermore, this project has helped WHAUP reduce its reliance on major raw water suppliers and mitigate the risks associated with fluctuations in the quantity and quality of upstream water sources, such as drought, pollution, and contamination key risks for utility providers. The project also enables WHAUP’s industrial customers to access high-quality water products at reasonable prices. Additionally, the innovation behind the Demineralized Reclaimed Water project serves as a prototype that can be replicated in WHAUP’s new industrial estates and expanded to local communities, such as using treated wastewater from communities to produce high-quality industrial water.

DEMINERALIZED RECLAIMED WATER



SUPERVISORY CONTROL AND DATA ACQUISITION (SCADA) TECHNOLOGY AT WASTEWATER TREATMENT PLANT

WHAUP has adopted Supervisory Control and Data Acquisition (SCADA) technology to maximize operational efficiency at all wastewater treatment plants within WHA's industrial estates, located in the Eastern Economic Corridor of Innovation (EECI) in Wang Chan District, Rayong Province. The SCADA system enables 24/7 monitoring of wastewater treatment operations, reducing the need for on-site personnel by up to four staff members, resulting in annual cost savings of approximately THB 960,000. In addition, WHAUP operates centralized Control Centers at WHA Eastern Industrial Estate (Map Ta Phut) and Eastern Seaboard Industrial Estate (Rayong). WHAUP also plans to integrate Artificial Intelligence (AI) technology to further enhance operational efficiency. By leveraging data collected through SCADA, AI will be applied in predictive maintenance processes to assess machinery servicing needs in advance. This will help ensure continuous operations and reduce the risk of equipment failure.

SMART METERING TECHNOLOGY

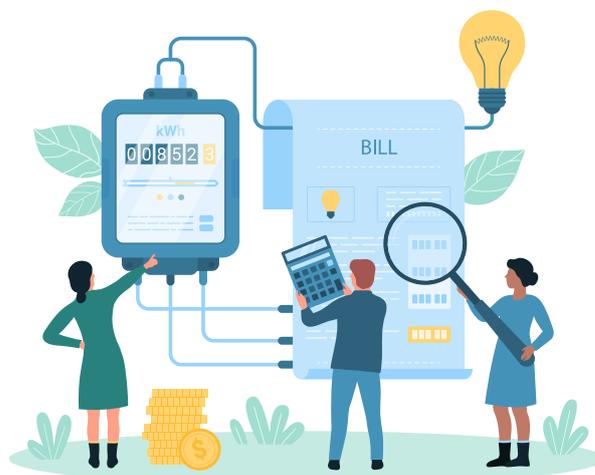
The "Smart Metering" technology has been implemented by WHAUP to enhance the ability to monitor water consumption. This involves replacing the previously installed analog water meters, which recorded water usage, with digital display systems. In addition, Pressure Transmitters have been set up to monitor pressure levels for industrial operators within the industrial estates. The use of digital data recording reduces personnel costs associated with gathering and organizing data from all water meters for billing purposes. Furthermore, this system allows for the expansion of services, enabling customers to access their water usage data on an hourly basis. This capability helps customers observe their usage patterns and quickly identify any abnormalities, such as potential leaks in the water distribution system. The technology also enables WHAUP staff to efficiently monitor and resolve meter irregularities. Additionally, the system simplifies the billing process by transmitting and storing data at the WHA Tower, eliminating the need for staff to travel to customer locations and manually record water usage. Currently, the Smart



Metering system is operational within the WHA Eastern Industrial Estate (Map Ta Phut) (WHA EIE), helping to save approximately 4 million baht annually by reducing water loss, improving meter accuracy, and minimizing meter-related abnormalities.

ONLINE METERING FOR CUSTOMERS

In addition to implementing Smart Metering technology for its own operations, WHAUP has launched the Online Metering project for new customers located within WHAUP's industrial estates in 2024. This project allows customers to access their water usage data more efficiently through the development of an Online Metering Platform. The goal of this initiative is to reduce water management costs for customers, enabling them to manage water usage quickly and sustainably. WHAUP aims for the project to ease the burden on customers in recording water consumption data, while providing them with the ability to monitor and manage their water usage more conveniently and effectively.





RO PERFORMANCE FORECASTING

The “Reverse Osmosis (RO) Performance Forecasting” initiative exemplifies WHAUP’s commitment to enhancing water management efficiency through digital innovation. This project leverages machine learning and Artificial Intelligence (AI) to forecast water quality and predict the lifespan of RO system membranes. The tool enables real-time monitoring of key parameters such as water temperature, levels of heavy metal contamination, and microbial presence ensuring consistent water quality even under fluctuating source conditions. Accurate forecasting of membrane lifespan allows for optimized maintenance planning, which in turn helps reduce electricity and chemical consumption, as well as minimizes premature membrane replacements. The integration of AI also facilitates real-time system performance tracking via an intuitive dashboard, complete with alert functions for abnormal system behavior.

As a provider of utility systems in industrial estates, WHAUP is committed to applying technology to optimize water resource management. The RO Performance Forecasting project is a strong example of innovation in action improving water use efficiency, minimizing water losses and operational costs, and reducing environmental impacts. Ultimately, this initiative supports operational continuity and aligns with WHAUP’s long-term sustainable development goals.

COLLABORATIVE WATER USAGE REDUCTION AND MANAGEMENT EFFICIENCY PROJECT

WHAUP prioritizes the efficient use of water and improving water management practices by collaborating with various sectors, including government agencies, private entities, and industrial operators within WHAUP ‘s industrial estates. These collaborations aim to find ways to share water resources effectively. Initiatives include the establishment of industrial water user organizations and participation as a committee member of industrial watershed management bodies to conduct activities that benefit water usage, management, maintenance, and conservation efforts. WHAUP has also focused on developing systems for reusing wastewater from production processes as industrial water, which can then be repurposed in other processes following the principles of Industrial Ecology. This approach helps reduce reliance on external raw water sources and minimizes environmental impacts.

WHAUP believes that effective water management not only reduces costs and strengthens water security for the organization but also plays a crucial role in fostering collaboration with stakeholders, building investor confidence, and supporting the organization’s long-term sustainability goals.

WATER USE MANAGEMENT IN OFFICE BUILDINGS

WHAUP places great importance on efficient water use in office buildings, recognizing them as key areas for tangible water resource management. In collaboration with WHA Group, WHAUP has implemented appropriate technologies and methods to enhance water efficiency. One such initiative is the reuse of treated wastewater for landscape irrigation. Under this initiative, treated water processed according to regulatory standards is reused to irrigate green areas surrounding the side and rear sections of the building. This initiative is expected to reduce municipal water consumption for irrigation purposes by approximately

876 cubic meters per year, promoting resource circularity and efficient utilization. This practice also helps lower the overall municipal water usage of WHA Tower, WHAUP's main office building, which houses operations and accommodates multiple tenant organizations.

WHAUP has set an ongoing goal to reduce water usage within WHA Tower each year. Progress is monitored regularly, and measures are continuously improved to enhance effectiveness. These efforts support WHAUP's water conservation objectives and its broader long-term sustainability goals.

	Target 2024	Performance 2024	Target 2025
Water Consumption in WHA Tower Office Building	33,600 m ³	30,677 m ³	31,200 m ³

5. IMPACTS ON STAKEHOLDERS AND ENVIRONMENT

WHAUP is committed to water resource management based on the principles of the Circular Economy, aiming to support the development of Thailand's industrial sector in alignment with government goals. The company's water management policy focuses on achieving a balance between financial performance and long-term environmental sustainability, while also adapting to the rapid changes in the economy and climate.

WHAUP believes that the successful application of innovation and modern technology in its water management efforts has significantly reduced negative impacts while creating positive outcomes for both the environment and society. One key initiative is the Water Reclamation project, which plays an important role in advancing environmental and social development by reducing the volume of wastewater discharged into natural water bodies and decreasing the withdrawal of water from natural sources by as much as 7.8 million cubic meters in 2024. This is equivalent to the annual water consumption of more than 215,071 people, making it one of WHAUP's most successful projects.

In addition, WHAUP continues to implement community-based water management initiatives, such as the "Clean Water for Planet" project, which aims to strengthen environmental and economic resilience in communities surrounding industrial estates. The project also promotes long-term awareness of water and natural resource conservation. These initiatives reflect WHAUP's commitment to environmental stewardship and responsibility toward stakeholders, while also fostering collaboration with the government and local communities to build a sustainable future. WHAUP, in partnership with WHA Group, continues to implement these community-focused water management projects, with "Clean Water for Planet" being a key initiative that seeks to promote sustainability and resilience in both environmental and economic aspects within communities near WHAUP's industrial estates. It also raises public awareness and understanding of the importance of conserving water and natural resources in the long term.

6. NEXT STEP

Water management has always been a priority for WHAUP since the company began its utilities and power business in 2008. As such, WHAUP is committed to enhancing its water management capabilities both in the short and long term through a robust

management strategy. In 2024, WHAUP's utilities business achieved its highest performance to date, both in terms of financial results and environmental outcomes. To sustain this success, the company has set long-term goals, including expanding production capacity and scaling up its water reclamation projects. By 2029, WHAUP aims to reduce the withdrawal of natural water sources by at least 25 million cubic meters per year through increased water reuse, which is expected to save up to THB 290 million annually in raw water procurement costs.

Moreover, WHAUP continues to develop new projects that leverage technology and innovation to enhance operational efficiency while creating positive environmental impacts. For example, the AI & SCADA project improves the accuracy and responsiveness of operation and maintenance activities. Additionally, the Online Metering project enables precise water loss assessment and optimizes water distribution control, reducing reliance on manual data collection, speeding up billing processes, and invoice issuance. WHAUP also emphasizes the use of Optical Character Recognition (OCR) technology to convert images into digital data, allowing for accurate automatic meter reading, minimizing errors from manual entry, and accelerating data analysis. Importantly, these technologies contribute to reducing water loss by effectively detecting and alerting leakage incidents. Altogether, these initiatives demonstrate WHAUP's commitment to being a leader in smart water solutions, not only lowering costs and improving operational efficiency but also helping to conserve water resources and promote sustainability for both industry and society.





GRI Content Index

GRI Standard	Disclosure	Location		Omission		
		Chapter	Page/ Note	Requirement (s) Omitted	Reason	Explanation
General Disclosure						
GRI 2: General Disclosure 2021	2-1 Organizational details	About Report WHA Group Strategic Locations	8 15 - 17, 21 - 23			
		Shareholding Structure	24 - 25			
	2-2 Entities included in the organization's sustainability reporting	About Report Shareholding Structure	8 24 - 25			
	2-3 Reporting period, frequency and contact point	About Report	8			
	2-4 Restatements of information	(No restatements in 2024)	-			
	2-5 External assurance	External Assurance	320 - 321			
	2-6 Activities, value chain and other business relationships	Shareholding Structure Value Chain	24 - 25 27			
	2-7 Employees	Performance Data 2024	-			
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	2-9 Governance structure and composition	Codes of Business Conduct	42 - 45			
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	2-12 Role of the highest governance body in overseeing the management of impacts	Codes of Business Conduct	42 - 45			
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	2-14 Role of the highest governance body in sustainability reporting	Sustainability Material Issues	32			
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	2-16 Communication of critical concerns	Codes of Business Conduct	50 - 51			
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GRI Standard	Disclosure	Location		Omission		
		Chapter	Page/ Note	Requirement (s) Omitted	Reason	Explanation
	2-19 Remuneration policies	Codes of Business Conduct Remuneration Policy for Directors and Top Executives	47 -	a.) i., ii., iii., v.	Confidentiality Constraint	Remuneration Policy is confidential constraint information for WHA Group
	2-20 Process to determine remuneration	Codes of Business Conduct	47			
	2-21 Annual total compensation ratio	-	-	a.) b.) c.)	Confidentiality Constraint	Annual total compensation ratio is confidential constraint information for WHA Group
	2-22 Statement on sustainable development strategy	CEO Message	3-5			
	2-23 Policy commitments	Codes of Business Conduct WHA Code of Conduct and Practices	46 - 53 -			
	2-24 Embedding policy commitments	Codes of Business Conduct WHA Code of Conduct and Practices	46 - 53 -			
	2-25 Processes to remediate negative impacts	Codes of Business Conduct	50 - 51			
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	2-27 Compliance with laws and regulations	Performance Data 2024	-			
	2-28 Membership associations	Awards and Memberships	6 - 7			
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GRI 3: Material Topics 2021	3-1 Process to determine material topics	Sustainability Material Issues Stakeholder Engagement	31 - 33 34 - 40			
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GRI 3: Material Topics 2021	3-3 Management of material topics	Codes of Business Conduct	42 - 53			

GRI Standard	Disclosure	Location		Omission		
		Chapter	Page/Note	Requirement (s) Omitted	Reason	Explanation
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	205-3 Confirmed incidents of corruption and actions taken	Performance Data 2024	-			
GRI 206: Anti-competitive Behavior 2016	206-1 Legal actions for anti-competitive behavior, anti-trust, and monopoly practices	Performance Data 2024	-			
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GRI 3: Material Topics 2021	3-3 Management of material topics	Technology & Innovation	105 - 117			
GRI 203: Indirect Economic Impacts 2016	203-1 Infrastructure investments and services supported	Climate Strategy	112			
	203-2 Significant indirect economic impacts	Climate Strategy	116			
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GRI 3: Material Topics 2021	3-3 Management of material topics	Occupational Health and Safety	165 - 181			
GRI 403: Occupational Health and Safety 2018	403-1 Occupational health and safety management system	Occupational Health and Safety	166 - 169			
	403-2 Hazard identification, risk assessment, and incident investigation	Occupational Health and Safety	167 - 171			
	403-3 Occupational health services	Occupational Health and Safety	172 - 175 179			
	403-4 Work participation, consultation, and communication on occupational health and safety	Occupational Health and Safety	171			
	403-5 Worker training on occupational health and safety	Occupational Health and Safety	176 - 177			
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	403-7 Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	Occupational Health and Safety	173 - 174			
	403-8 Workers covered by an occupational health and safety system	Performance Data 2024	-			
	403-9 Worker-related injuries	Performance Data 2024	-			
	403-10 Work-related ill health	Performance Data 2024	-			

GRI Standard	Disclosure	Location		Omission		
		Chapter	Page/ Note	Requirement (s) Omitted	Reason	Explanation
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	413-2 Operations with significant actual and potential negative impacts on local communities	WHA Group Strategic Locations Stakeholder Engagement	15 - 17, 21 - 23 35 - 36 39			
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GRI 201: Economic Performance	201-2 Financial implications and other risks and opportunities due to climate change	Climate Strategy	263 - 267			
GRI 305: Emissions 2016	305-1 Direct (Scope 1) GHG emissions	Performance Data 2024	-			
	305-2 Energy indirect (Scope 2) GHG emissions	Performance Data 2024	-			
	305-3 Other indirect (Scope 3) GHG emissions	Performance Data 2024	-			
	305-4 GHG emissions intensity	Performance Data 2024	-			
	305-5 Reduction of GHG emissions	Performance Data 2024	-			
	305-6 Emissions of ozone-depleting substances (ODS)	Performance Data 2024	-			
	305-7 Nitrogen oxides (NOx), sulfur oxides (SOx), and other significant air emissions	Performance Data 2024	-			
Energy Management						
GRI 3: Material Topics 2021	3-3 Management of material topics	Energy Management	277 - 290			
GRI 302: Energy 2016	302-1 Energy consumption within the organization	Performance Data 2024	-			
	302-2 Energy consumption outside of the organization	Performance Data 2024	-			
	302-3 Energy Intensity	Performance Data 2024	-			
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GRI Standard	Disclosure	Location		Omission		
		Chapter	Page/ Note	Requirement (s) Omitted	Reason	Explanation
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GRI 303: Water and Effluents 2018	303-1 Interactions with water as a shared resource	Water Management	303 - 308 315 - 316			
	303-2 Management of water discharge-related impacts	Water Management	307 - 308			
	303-3 Water withdrawal	Performance Data 2024	-			
	303-4 Water discharge	Performance Data 2024	-			
	303-5 Water consumption	Performance Data 2024	-			



การวิเคราะห์สถานการณ์ในอนาคต (SCENARIO ANALYSIS) ที่เกี่ยวข้องกับการเปลี่ยนแปลงสภาพภูมิอากาศ

		Scenario 1								
		4C Scenario								
		BAU								
		Short Term (1-5 years)				Medium Term (>5 years)				
Risk Type	Specific Risk	WHALG	WHAID	WHAUP (Utilities)	WHAUP (Power)	WHALG	WHAID	WHAUP (Utilities)	WHAUP (Power)	WHALG
PHYSICAL RISKS										
Acute	Flooding	Medium	Medium	Medium	Low	Medium	Medium	Medium	Low	Medium
	Drought	Low	Medium	Medium	Low	Low	Medium	Medium	Low	Low
	Storm and lighting	Medium	Medium	Medium	High	Medium	Medium	Medium	High	Medium
Chronic	Increase mean temperature	Medium	Medium	Medium	High	Medium	Medium	Medium	High	Medium
TRANSITION RISKS										
Policy and Legal						Low	Low	Low	Low	Low
Technology - New improvements or innovations						Low	Low	Low	Low	Low
Market - shift in supply and demand						Low	Low	Low	Low	Low
Reputation - Change in customer and community perception						Low	Low	Low	Low	Low
OPPORTUNITIES										
Market - shift in supply and demand						Low	Low	Low	Low	Low
Resource Efficiency & Energy Source						Low	Low	Low	Low	Low
Technology - New improvements or innovations						Low	Low	Low	Low	Low

■ Low
 ■ Medium
 ■ High
 ■ Very high



LRQA Independent Assurance Statement

Relating to WHA Utilities and Power Public Company Limited 's GHG Assertion for the calendar year 2024

This Assurance Statement has been prepared for WHA Utilities and Power Public Company Limited in accordance with our contract but is intended for the readers of this Report.

Terms of engagement

LRQA (Thailand) Limited was commissioned by WHA Utilities and Power Public Company Limited (WHAUP) to provide independent assurance on its GHG Assertion 2024 against the AccountAbility's AA1000AS v3 assurance criteria to a moderate level of assurance with reference to the GRI specific standard disclosures listed below and materiality level of the professional judgement of the verifier is applied, where the scope was a Type 2 engagement.

Our assurance engagement covered WHAUP's financial control in Thailand only and specifically the following requirements:

- Evaluating the reliability of data and information for only the selected environmental indicators listed below:
 - GRI 305-1: Direct GHG emissions (Scope 1)^{1, 2}
 - GRI 305-2: Energy indirect GHG emissions (Scope 2)

Our assurance engagement excluded the data and information of WHAUP's financial control and activities outside Thailand, as well as suppliers, contractors and any third parties mentioned in the report.

LRQA's responsibility is only to WHAUP. LRQA disclaims any liability or responsibility to others as explained in the end footnote. WHAUP's responsibility is for collecting, aggregating, analysing and presenting all the data and information within the Assertion and for maintaining effective internal controls over the systems from which the Assertion is derived. Ultimately, the Assertion has been approved by, and remains the responsibility of WHAUP.

LRQA's Opinion

Based on LRQA's approach nothing has come to our attention that would cause us to believe that WHAUP has not, in all material respects:

- Met the requirements above.
- Disclosed reliable performance data and information as no errors or omissions were detected.

The opinion expressed is formed on the basis of a moderate level of assurance and at the materiality of the professional judgement of the verifier.

Note: The extent of evidence-gathering for a moderate level of assurance engagement is less than for a high level of assurance engagement. Moderate assurance engagements focus on aggregated data rather than physically checking source data at sites. Consequently, the level of assurance obtained in a moderate assurance engagement is substantially lower than the assurance that would have been obtained had a high assurance engagement been performed.

LRQA's approach

LRQA's assurance engagements are carried out using AA1000AS v3. The following tasks though were undertaken as part of the evidence gathering process for this assurance engagement:

- Auditing WHAUP's data management systems to confirm that there were no significant errors, material mis-statements in the report. We did this by reviewing the effectiveness of data handling procedures, instructions, and systems, including those for internal verification. We also spoke with those key people responsible for compiling the data and drafting the report.
- Sampling of evidence during remote verification from facilities level, only the selected indicators to confirm its reliability.

¹ <https://www.globalreporting.org>

² GHG quantification is subject to inherent uncertainty.

Observations

Further observations and findings, made during the assurance engagement, is:

- **Reliability:** Data management systems are properly defined for the selected environmental indicators. However, should consider interim verification to further improve the reliability and timeliness of its disclosed data and information.

LRQA’s Standards, competence and independence

LRQA ensures the selection of appropriately qualified individuals based on their qualifications, training and experience. The outcome of all verification and certification assessments is then internally reviewed by senior management to ensure that the approach applied is rigorous and transparent.

This verification is the only works undertaken by LRQA for WHA Utilities and Power Public Company Limited and as such does not compromise our independence or impartiality.



Opart Charuratana
LRQA Lead Verifier

Dated: 20 March 2025

On behalf of LRQA (Thailand) Ltd.
No. 252/123 (C), Muang Thai – Phatra Complex Tower B.
26th floor, Ratchadaphisek Road., HuayKwang, Bangkok, 10310, THAILAND
LRQA reference: BGK00001206/A

Table 1. Summary of WHA Utilities and Power Public Company Limited, GHG Assertion 2024

Scope of CO2 emissions	CY 2021 01 Jan - 31 Dec 2021	CY 2024 01 Jan - 31 Dec 2024
<ul style="list-style-type: none"> • GRI 305-1: Direct GHG emissions (Scope 1) excludes HCFC-22 (R-22). 	274	447
Biogenic emissions.	23	33
<ul style="list-style-type: none"> • GRI 305-2: Energy indirect GHG emissions (Scope 2). 		
Location based	13,458	17,069
Market based	13,458	16,185
Notes: <ul style="list-style-type: none"> • Data is presented in tonnes of CO₂ equivalent. • CY2021 is an organization selected base year. 		

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The English version of this Assurance statement is the only valid version. LRQA Group limited assumes no responsibility for versions translated into other languages.

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FEEDBACK FORM : 2024 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	<input type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Dissatisfied
Content cover your interested topics	<input type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Dissatisfied
Reliable information	<input type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Dissatisfied
The design of this report	<input type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Dissatisfied
Readability	<input type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Dissatisfied
Overall satisfaction with the Report	<input type="checkbox"/> High	<input type="checkbox"/> Medium	<input type="checkbox"/> Dissatisfied

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:
Sustainability Development Working Team : WHA Utilities and Power Public Company Limited
777 WHA TOWER, 22nd Floor, Unit 2203-2205, Moo 13, Debaratna Road (Bangna-Trad) KM.7,
Bang Kaeo, Bang Phli, Samutprakarn 10540 Thailand
E-mail : Sustianability@wha-group.com





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