

“SET Awards 2024” Sustainability Excellence



WHA Corporation PCL.

10 September 2024

Introducing Speakers

Ms. Jareeporn Jarukornsakul

*Chairman of the Executive Committee and Group Chief Executive Officer,
WHA Corporation PCL.*

Mr. Natthapatt Tanboon-ek

*Chief Financial Officer,
WHA Corporation PCL.*



POSITION & COMPANY

- **WHA Corporation PCL.**
 - Vice Chairman of The Board of Directors
 - Chairman of the Executive Committee
 - Group Chief Executive Officer
- **WHA Industrial Development PCL.**
 - Chairman of The Board of Directors
 - Chairman of the Executive Committee
- **WHA Utilities and Power PCL.**
 - Chairman of The Board of Directors
 - Chairman of the Executive Committee
 - Chairman of the Risk Management Committee



POSITION & COMPANY

- **WHA Corporation PCL.**
 - Executive Committee
 - Chief Financial Officer
- **WHA Utilities and Power PCL.**
 - Board of Directors
 - Executive Committee

The Future is Now



Leveraging Global Megatrends and Opportunities

Navigating Strategic Challenges Ahead to Strengthen WHA's Group Business and Value Chain

GLOBAL GEOPOLITICAL & ECONOMIC ADJUSTMENTS

GEOPOLITICAL TENSION

Conflicts among countries impacting international trade and capital flows



MANUFACTURING RELOCATION

FDI flow to China hit the lowest since 1998, while there are trends of reshoring, nearshoring and friendshoring



TECH-ENABLED & SOCIAL EVOLUTION

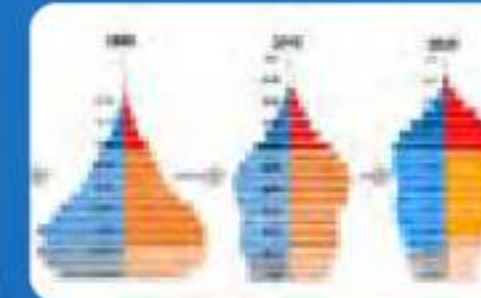
TECHNOLOGICAL TRANSFORMATION

A wave of new technologies such as AI, blockchain, web 3.0 will transform the way of doing businesses



DEMOGRAPHIC SHIFT

Aging population, the rise of middle class, next generation of workforce



HEALTH AWARENESS

The trend of increasing health awareness both physically and psychologically



SUSTAINABILITY & CLIMATE-DRIVEN ENERGY TRANSITION

SUSTAINABILITY & CLIMATE CHANGE

Consumption of resources constitutes a threat to the environment



RENEWABLE ENERGY (RE100)

Businesses increasingly demand more renewable energy in their operation



Geopolitical Developments in 2024

Significant Events to Watch Out



● Geopolitical tension
● Geopolitical events/Situations

A The war between Russia and Ukraine persisted

B A military confrontation between Israel and Palestine



C North Korea Ended Inter-Korean Military Agreement

The tenuous relationship between North and South Korea deteriorated further after Seoul announced its intention to suspend part of a joint military agreement in response to Pyongyang's illegal launch of a satellite in November 2023. North Korea responded by terminating its participation entirely. It later announced that unification with South Korea is no longer a viable policy goal.

D China-Taiwan: One China Policy

After Lai Ching-te from the governing Democratic Progressive Party (DPP) won the election, China responded "No matter how the situation in Taiwan changes, the basic fact that Taiwan is part of China will not change."



E Geopolitics of the Ocean

- Competition over control of and access to the world's oceans will intensify in 2024, with implication for supply chains, data flows, food supplies and energy security.
- Recent situations include (i) US vs Yemen in Red Sea, (ii) ongoing military actions in the Black Sea, (iii) increased naval and air operations in South China Sea and (iv) naval clashes in the Persian Gulf.

F Global Elections Supercycle

In 2024, a wave of elections in countries representing nearly 60% of global GDP will occur.

- Key Elections:**
- 1Q'24: Taiwan, Indonesia
 - 2Q'24: India, European Union
 - 4Q'24: US
 - Not yet determined: UK

G Domestic Challenges in the US and China

- In the **US**, there are challenges on basic governance functions, including debt management and passing a budget, which led to a downgrade in its sovereign debt rating in 2023.
- In **China**, challenges stem from macroeconomic weaknesses (real estate market and high municipal government debt).



H Geopolitics of AI

Governments have been grappling with how best to regulate AI and may do so in divergent ways. Technological advances in AI have also increased its importance to national security and geopolitical competition.

- In 2023, China introduced several AI-specific regulations
- G7 agreed a set of AI Principles and a Code of Conduct
- EU advanced negotiations on the AI Act
- The US Biden Administration issued an executive order on AI safety and security



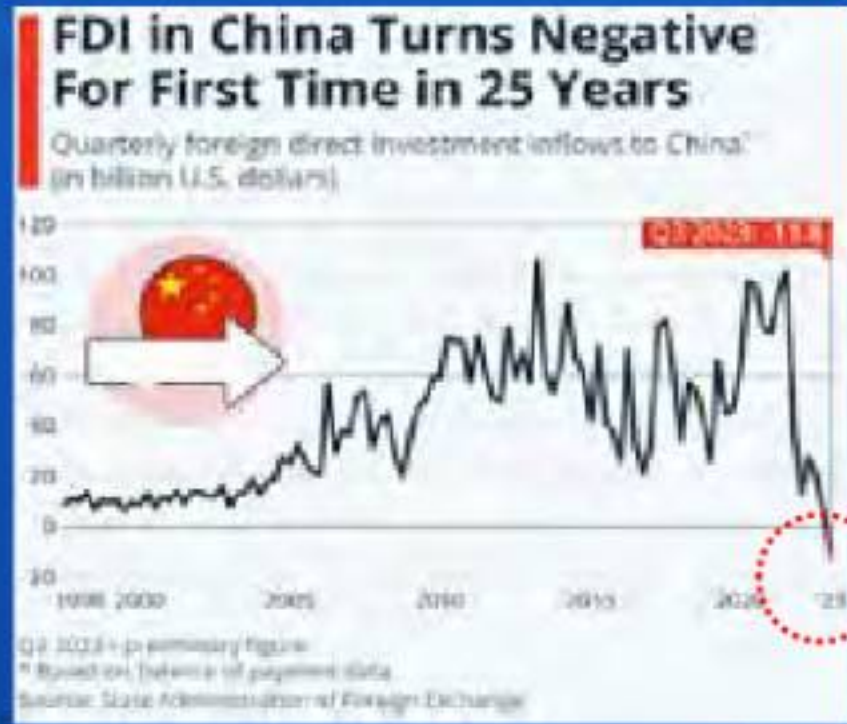
I Green and Sustainable Policies

Governments (such as EU, China, Brazil, Australia) will increase support for domestic green technology manufacturing, which reinforces both energy security and economic growth goals, while also furthering decarbonization.



Manufacturing Base Relocation

Global companies have been relocating from China, while greenfield FDI to India, Vietnam and Thailand has risen. This trend is likely to continue in 2024.

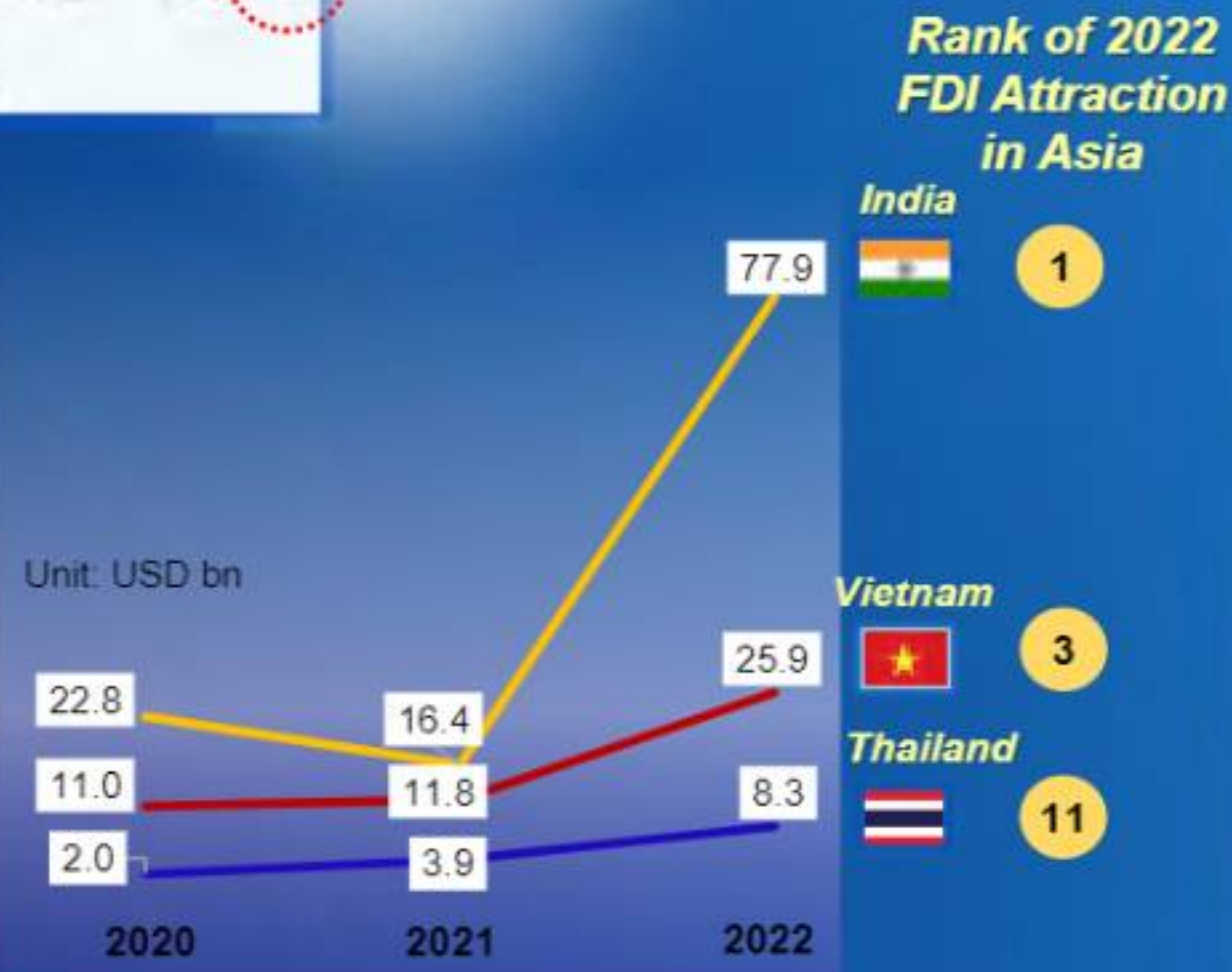


Q3'23 FDI IN CHINA TURNED NEGATIVE FOR THE FIRST TIME IN 25 YEARS

MANUFACTURING BASE IS BEING RELOCATED TO COUNTRIES WITH ATTRACTIVE FACTORS



INCREASING GREENFIELD FDI TO INDIA, VIETNAM AND THAILAND



Neutral Political Situation

Attractive Investment Incentives

Supportive Government Policies

Competitive Labor Pool

Thailand is Well-Positioned to be Regional Manufacturing Hub



Strategic Location with Comprehensive Supporting Value Chains and Intensive Infrastructure Network



SUPPORTIVE INVESTMENT ENVIRONMENTS



- Strategic location
- Abundant industrial land
- Neutral political stance
- Established financial system
- Structured legal system

RELIABLE UTILITY AND POWER INCLUDING RE100



- Sufficient and reliable electricity and utility
- Green and sustainable energy
- Net Zero/Positive Water

INFRASTRUCTURE CONNECTIVITY



- Integrated transportation infrastructure (deep-sea ports, highways, railways)

ATTRACTIVE INVESTMENT INCENTIVES AND POLICIES



- Attractive investment incentives
- Fast and convenient process (one-stop service)
- Supportive government policy

COMPETITIVE SKILLED-WORKFORCE



- Relevant skill sets
- Competitive costs
- Technology capability

ESTABLISHED AND INTEGRATED SUPPLY CHAIN



- Comprehensive supply chain of targeted industries
- Industrial clusters
- Green Supply Chain

AI is Eating the World

AI-powered capabilities will be more prevalent among both consumers and businesses, and will be used to enhance day-to-day activities



AI TRENDS FOR 2024

• Augmented Working

The use of technology to enhance human capabilities and improve way of work

• Ethical AI

Development and use in a way that is fair, accountable, and beneficial to society

• Quantum AI

Entails employing quantum computers to conduct AI-related tasks and solve complex problems faster than traditional computers

• Next Generation of Generative AI

Multi-modal generative AI is at the forefront, capable of harmonizing various inputs such as text, voice, melodies, and visual cues

• AI Legislation

AI is no longer limited to the tech world; it has become a topic of interest for global policymakers

• AI Jobs

Soaring AI demand outstrips talent, fueling salary wars for skilled professionals.

The introduction of generative AI to the global landscape



AI Assistant

ChatGPT, Gemini, Claude are all advanced large language models, each with strengths in creative text formats, conversation, or factual accuracy based on real-world information



The new GPT-4o model, also known as Omni. This is a true multimodal AI capable of natively understanding text, image, video and audio with ease



Gemini Advanced

- a series of quality improvements across key use cases, such as translation, coding, reasoning and more
- help tackle even broader and more complex tasks

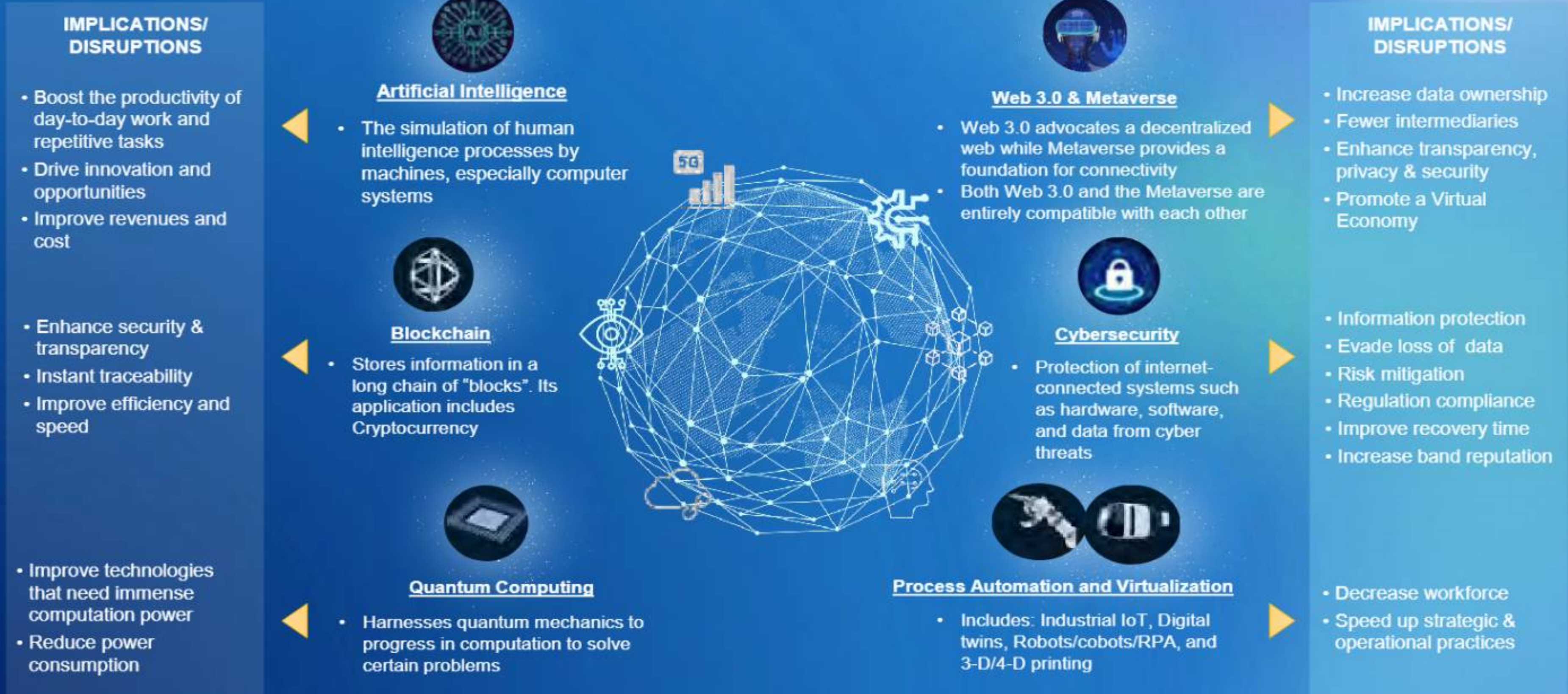


Text-to-image and video

AI tool with ability to generate incredibly realistic and creative images and videos based on text prompts



Technological Trends



Demographic Shift

The world's demographic and social change are shaping consumer behaviors

“ As demographics shift over time, the other megatrends will follow suit, creating promising business opportunities ”



AGING SOCIETY

Globally, the population aged 65 years or over will be more than doubled by 2050, from 728 million in 2020 to almost 1.6 billion



GENERATION SHIFT

The characteristics of people change over time (i.e. new generations concern more on sustainability and wellbeing), forming a new habit and behavior



CHANGING WORKFORCE

Fewer people are available to sustain the working population as population continues to age while birth rate continues to drop

Expanding Healthcare

- Global healthcare spending is predicted to grow to over US\$10 trillion in 2022
- High demand for healthcare services, especially long-term care and elderly treatment
- Growing healthcare needs especially in developing nations
- Healthcare technology improves patient outcomes and eradicates certain diseases, allowing people to live longer



New Lifestyle & Mindset

- Young people are highly personal, mindful, and motivated toward a flexible lifestyle
- Particularly Gen Z, they concern more on health & well-being so they are willing to pay a premium for healthy products, such as all-natural, GMO-free, sustainable, or vitamin-fortified foods

Consumer Behavior

- Consumers tend to be hyper-aware of social and environmental issues, increasing the demand for sustainable brands
- Consumers buy more online and seek personalization
- Spending power will continue to migrate to older populations as life expectancy continues to increase



Future Workforce

- Adapting a workforce's skill set is the key to keeping economies afloat
- Workers will need to develop more advanced skills to stay competitive
- Newer economies will need to ensure that automation supports a shrinking workforce



Net Zero/Climate Change

Not only is it a serious threat to the planet and to people, but climate change is also threatening the global economy

Consequences of Climate Change



Relocation of whole towns

Shrinking productivity

Threat on human health & wellbeing

Rising sea levels

Extreme weathers

Fresh water shortage

Drought

New diseases and illness

Decarbonization for Combating Climate Change¹



- Carbon dioxide (greenhouse gas) absorbs long-wavelength infrared energy (heat) from the Earth and then re-radiates it, some of it back downward, causing global climate change
- A decarbonization or climate strategy is used to accelerate the reduction of carbon emissions and other GHG emissions

Circular Economy



- A system where materials never become waste and nature is regenerated. In a circular economy, products and materials are kept in circulation through processes like maintenance, reuse, refurbishment, remanufacture, recycling, and composting
- The circular economy tackles climate change and other global challenges, like biodiversity loss, waste, and pollution, by decoupling economic activity from the consumption of finite resources

Global Initiatives Driving Climate Actions

Global Alliance Rises to the Climate Challenge

International Climate Regime

The Conference of the Parties (COP) is held every year to address the problem of climate change



Transition away from fossil fuels

COP28



Commitment to limit global temperature rise to 1.5 °Celsius above pre-industrial levels



RE100

A global initiative that brings together many of the world's most influential **businesses committed to using 100% renewable electricity** across their operations, on or before 2050



CBAM

The EU's Carbon Border Adjustment Mechanism (CBAM) is the EU's tool to put **a fair price on the carbon emitted** during the production of carbon intensive goods that are entering the EU, and to encourage cleaner industrial production in non-EU countries

EU Digital Product Passport (DPP)

- A collection of product information across its lifecycle
- **DPP is expected to be mandatory for most industries by 2030**
- First product passport has been drafted for batteries



Green Supply Chain

- Involves sustainable environmental processes built into conventional supply chains from manufacturing to operations to end-of-life management
- Incorporating the principle of 4R1D (reduce, reuse, recycle, reclaim and degradable)



Net Zero/Positive Water

Net Zero Water: Water consumed = Alternate water use + water return to water source

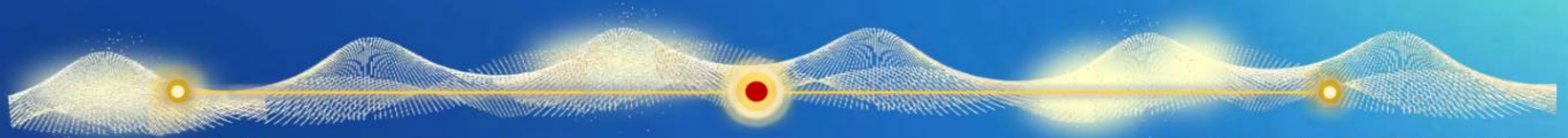
e.g., rainwater, reclaimed water

e.g., disposal of treated water, restoration of watersheds

Net Positive Water: Water consumed < Alternate water use + water return to water source



WHA: We Shape The Future



The Future is Now

Revolution in Sustainability

WHA : WE SHAPE THE FUTURE

The Ultimate Solution For Sustainable Growth



LOGISTICS



INDUSTRIAL DEVELOPMENT



UTILITIES AND POWER



DIGITAL SOLUTIONS

WHA Group Business



WHA
Logistics

**#1 Logistics
Properties Developer**

2,988,762 sqm
Owned & Managed

67 Strategic Locations ^{/1}

WHA
Industrial
Development

**#1 Industrial Estate
Developer**

77,600 Rai^{/2}
Land for Industrial Development

13 Industrial Estates^{/3}

1,052 Customers^{/4}

WHA
Utilities &
Power

**Leading Industrial
Utilities and Power
Provider**

178 mm m³
Water Utilities Sales & Management

932 Total Secured PPA
Equity MW Power

682 Installed Equity
MW Power

WHA
Digital

**WHA Digitalization
Enabler**

>38 Digital Transformation Projects

12 AI Transformation Projects



**Launched WHAbit
Application to customers**

Remark: The data is as of 30 June 2024

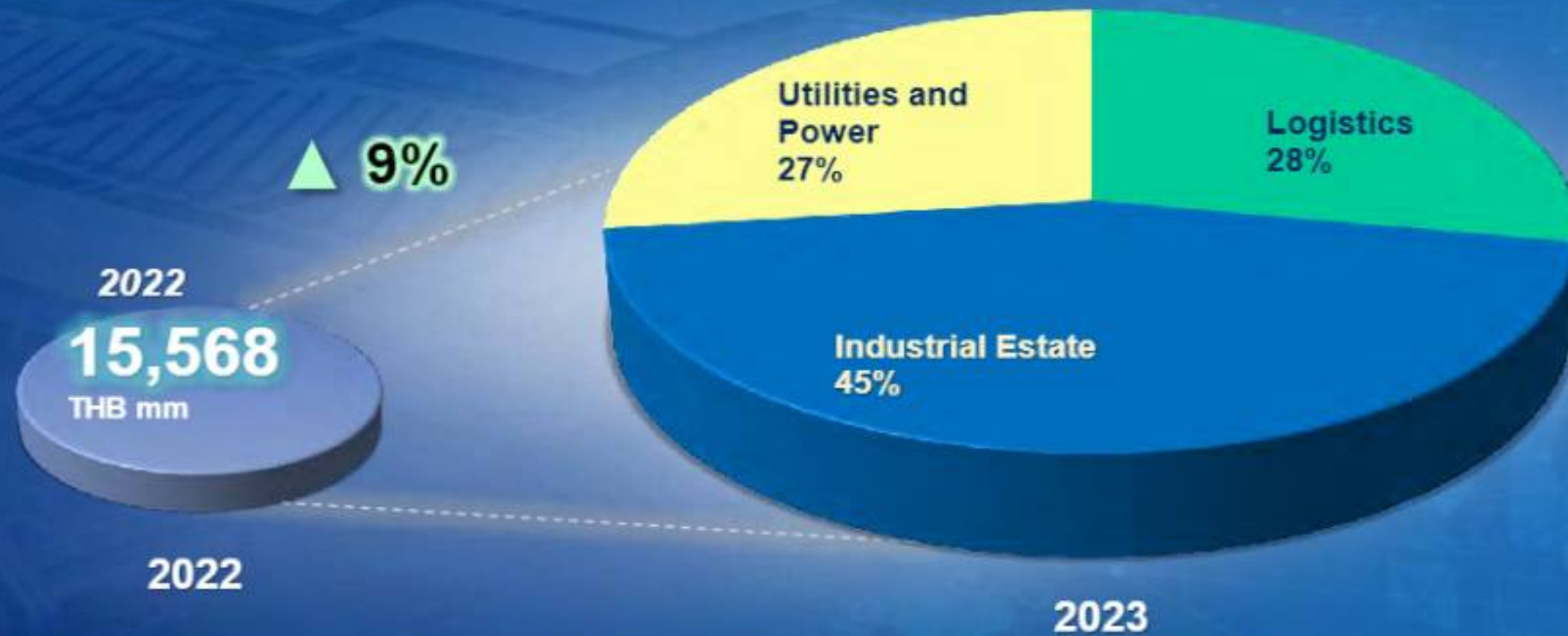
^{/1} Strategic locations for Built-to-Suit (BTS) warehouses and factories, ^{/2} Including 56,700 rai operating and under development in Thailand and Vietnam, ^{/3} 12 industrial Estates in Thailand and 1 Industrial estate in Vietnam, ^{/4} Accumulated customers based on land sales, land rent in Thailand and Vietnam

2023 Remarkable Achievements

Strong performance among the trends of relocating production bases and manufacturing facilities

★ All Time High ★

REVENUE AND SHARE OF PROFITS



Net profit 2023: 4,426 THB mm (+9% YoY Growth)

Total Asset 2023: 90,225 THB mm

IBD/Equity (Times): 1.10

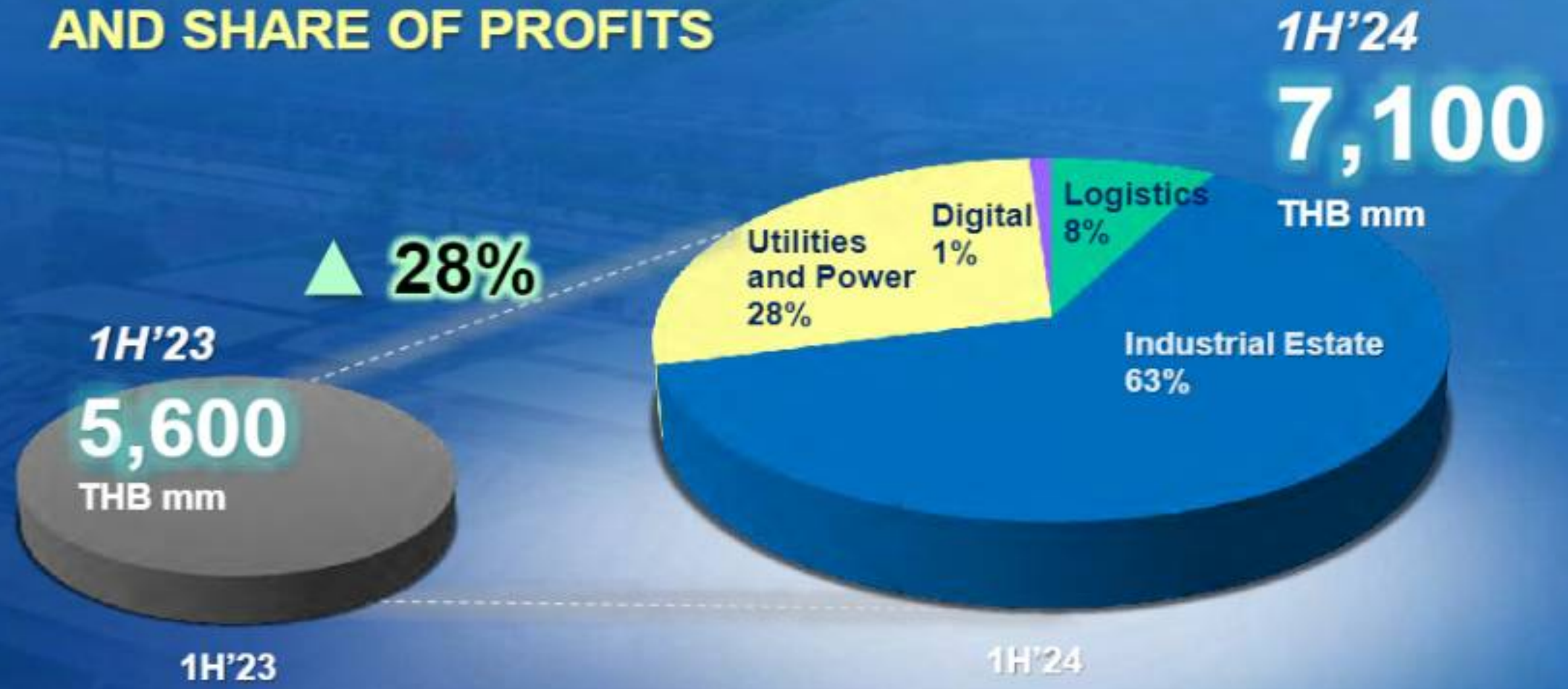
Credit Rating: Maintained A-

Remark : * Net Profit = Net Profit Attribute to Parent

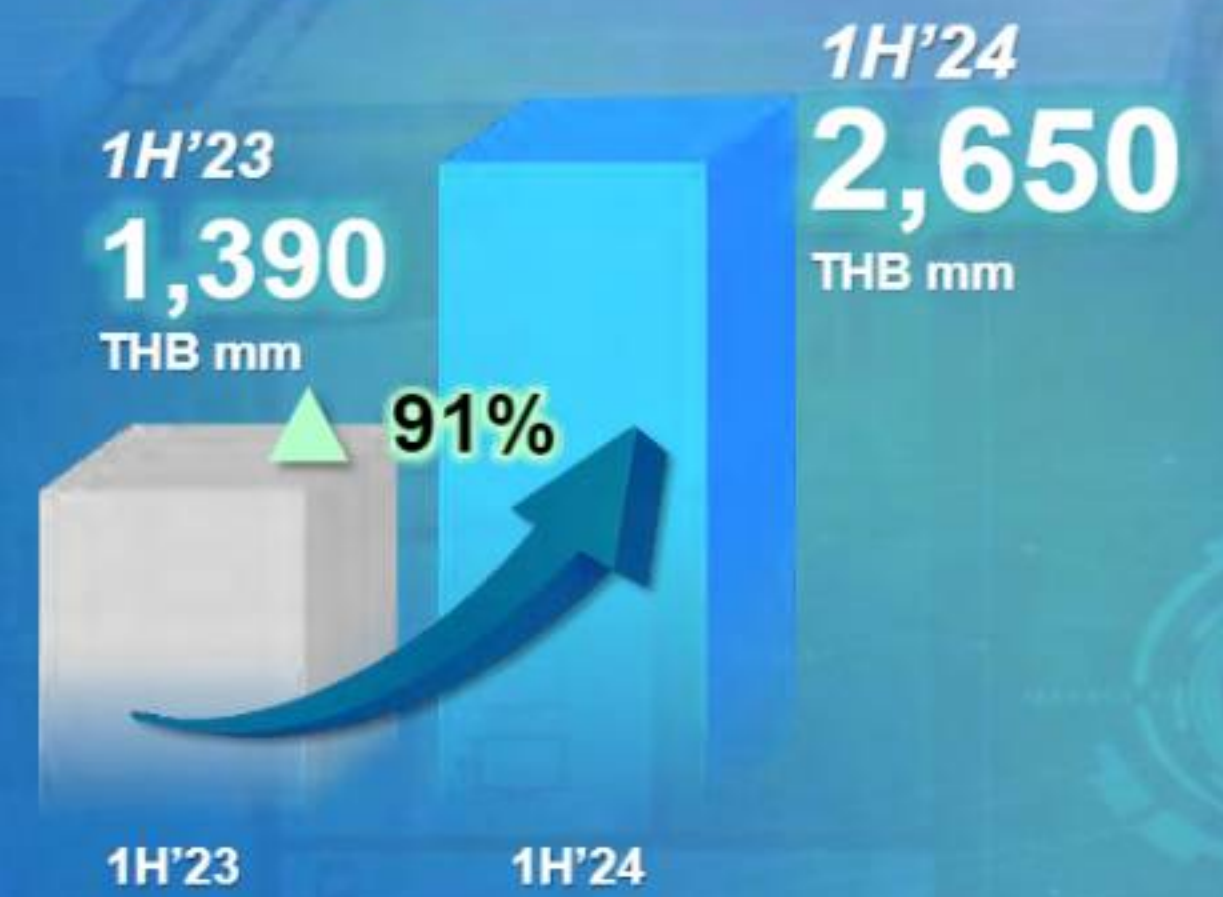
1H2024 Financial Highlights

Our Financial Performance Continues to Thrive and Grow Stronger

NORMALIZED REVENUE AND SHARE OF PROFITS



NET PROFIT¹



Total Asset as of 30 June 2024	96,800 THB mm	IBD/Equity (Times)	1.13	Credit Rating	Maintained A-
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Remark : ¹ Net Profit = Net Profit Attribute to Parent



Sustainable Growth via Capital Market

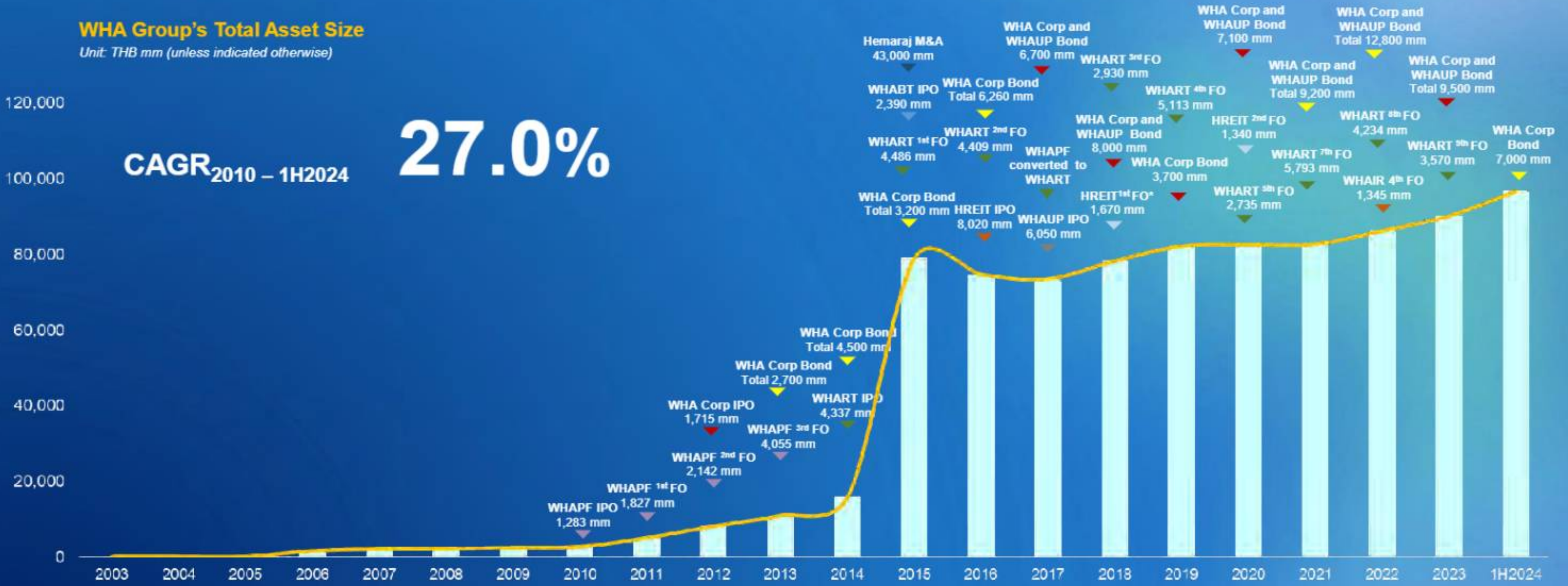
Maintaining our credibility and reputation among investors

WHA Group's Total Asset Size

Unit: THB mm (unless indicated otherwise)

CAGR_{2010 – 1H2024}

27.0%



Remark: Asset Size from 2003 – 2010 is based on a simple sum of 3 companies' total assets: 1) WHA Corporation, 2) WHA Alliance and 3) Warehouse Asia

* On June 2022, HREIT changed the company name and symbol to WHAIR

Sustainability Awards & Recognitions

2023 SET Awards

“Sustainability Excellence Category”

WHA Group
“Best Sustainability Awards”



For market capitalization of >30,000-100,000 million baht

WHAUP
“Commended Sustainability Awards”



For market capitalization of >10,000-30,000 million baht

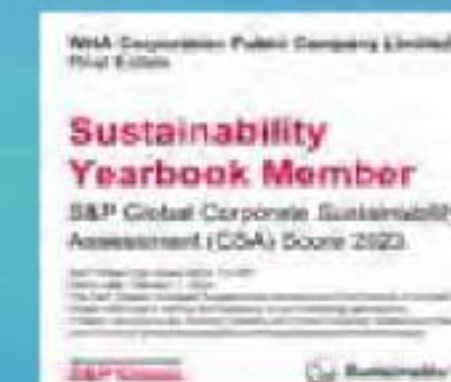
SET ESG Ratings 2023

WHA Group & WHAUP Attained the Highest Rating of “AAA” in SET ESG Ratings 2023, Listed as a Sustainable Stock for the 4th Consecutive Year¹



S&P Global Sustainability Yearbook 2024

WHA Group has been recognized a Sustainability Yearbook Member for 2 consecutive years with S&P Global CSA Score 2023: 76/100



Assessment Score of AGM Checklist 2023

Level “5-Rating”, obtaining a full score of 100 from the Thai Investors Association (TIA) in over three consecutive years (since 2021-2023)



Business Transparency

Certified as member of Thai Private Sector Collective Action Against Corruption (“CAC”) for three consecutive times. (since year 2014-2026)



5-Star CGR Rating

Corporate Governance Report of Thai Listed Companies in 5-Stars “Excellent” criteria from Thai Institute of Directors Association (IOD) over five consecutive years (since 2018-2023)



Thaipat ESG Rating 2024

Outstanding performance in sustainable development



WHA Group, WHAUP, WHAIR & WHART² are listed in the “2024 ESG100” Securities



WHAUP is recognized as one of the top 19 securities in the “2024 ESG Emerging” list

Remark: ¹ The Stock Exchange of Thailand has recently rebranded THSI (Thailand Sustainability Investment) to SET ESG Ratings ² WHART has been recognized as an investment-worthy fund in the ESG100 for the sixth consecutive year

WHA Group's Strategic Directions and 2024 Targets



WE SHAPE THE FUTURE



DOMESTIC CHAMPION

Consolidate our leadership position in our core markets



INTERNATIONAL EXPANSION

Accelerate our regional growth with focus on Vietnam



DIGITAL INNOVATION AND TECHNOLOGY

Embrace innovation and new technologies to enhance customer experience



SUSTAINABILITY

Develop new products and services with focus on sustainability



HIGH-PERFORMANCE ORGANIZATION AND TECH COMPANY

Digital transformation and build high-performance organization



2024 Target Deliverables



Asset under Owned and Managed

3,145,000 SQM

New Projects/ New Contracts

200,000 SQM*



2,500 Rai Industrial Land Sales



178 Million m³

Utilities Sales & Management Volume

1,000 MW

Secured PPA Equity MW



Empower and Create New Businesses

*Target area of new projects and new contracts include all types of projects i.e. BTS, RBF, General Warehouse

WHA's Aspiration to Become a Tech Company



2024

Turning to Technology Company

“AI Transformation”

Build Digital-Ready Culture in Organization

by optimizing practices with AI and Data Insights to lead in the dynamic business landscape, ensuring sustained superiority

Digital Transformation

Utilize digital technology to reach new levels of operations reliability and efficiency to empower core business and lead to superiority over industrial competitors.

Innovative Workplace

Build Innovation Culture, Workplace and Workforce to create new revenue streams, innovative products making WHA superior to competitors.

Data Driven Organization

Turn data asset into a competitive advantage with a data insights through:

- Manage digital assets
- Innovate with data
- Data monetization

2023

AI & ML Data Insight

- Enhance productivity & efficiency lead to better decision making

AI Cybersecurity

- Implement advanced cyber threat detection & prevention

Generative AI : Yoda Bot

- Allow employee to access WHA knowledge & information using prompt engineering
- Yoda V.2 : New feature updated



Yoda V.1



Yoda V.2

- ✓ AI Model GPT-4o
- ✓ Interpret Image
- ✓ Multiple Files
- ✓ Audio-to-Text
- ✓ Privacy Vector

2021

2022

Digital Transformation Projects

>38

As of 1H2024

Projects

> 50
Applications

Total Investment

160

THB Million

Enhance
Productivity
& Improve
Efficiency

Real-time &
Centralized
Monitoring

Cost
Reduction

UOC "Unified Operation Center"

Solar Monitoring and Predictive O&M

Enterprise Asset Management (EAM)

Realtime CCTV on Map

Smart Traffic Management

Contract Management

Corporate Project Management

Enterprise Data Warehouse

Corporate Procurement Management

Smart Water Solution

Logistics and Building Management

Data Management Platform

12 AI Transformation Projects in 2024



Computer Vision

Drone Inspection

Warehouse roof leakage inspection

Progress: Development
Sponsor: K.Pajongwit
Owner: K.Bordin
Team Involve: WHADG



Generative AI: Legal
Streamlining contract analysis and creation

Progress: Development
Sponsor: K.Nat
Owner: K.Pimrumpa, K.Ratnaris
Team Involve: DIM



Generative AI: Procurement
AI optimizes procurement, contracts, and risk management

Progress: Development
Sponsor: K.Nattapatt
Owner: K.Dumrongchai
Team Involve: DIM



Generative AI: Corporate Marketing
Improve content and segmentation with AI for speed and diversity

Progress: Gathering Requirement
Sponsor: K.Apinya
Owner: K.Fasai
Team Involve: DIM



Generative AI: HR (Yoda)
Improve Yoda's HR replies for higher satisfaction and less workload

Progress: Open Beta Test
Sponsor: K.Dispong
Owner: K.Salida
Team Involve: DIM



Generative AI

Generative AI: Accounting (Yoda)
Boost Yoda for instant, accurate accounting replies, easing team effort

Progress: Open Beta Test
Sponsor: K.Somsak
Owner: K.Jutamas, K.Teerasak
Team Involve: DIM



Solar

Boost solar efficiency with anomaly detection and forecasting

Progress: Development
Sponsor: K.Akarin
Owner: K.Pittawat, K.Kittikorn
Team Involve: DIM



Water

Enhance water management with ML for anomaly detection and quality

Progress: Development
Sponsor: K.Akarin
Owner: K.Jirattiti
Team Involve: DIM



Revenue & Debt Management

Improve debt collection with AI for better efficiency and decision-making

Progress: Design
Sponsor: K.Natthapatt
Owner: K.Surintorn
Team Involve: DIM



AI/ML Data Insight

Cost Estimation

Use machine learning to find key cost drivers and forecast expenses with AI models

Progress: Development
Sponsor: K.Pajongwit
Owner: K.Nuttapong
Team Involve: DIM



AI Note Taker

AI Note Taker

Automate meeting transcription for team efficiency and privacy

Progress: Launched
Sponsor: K.Kanidha
Owner: K.Prapaporn
Team Involve: WHADG



AI Cybersecurity

AI Cybersecurity

Deploy AI for fast cyber threat detection and response

Progress: Launched
Sponsor: K.Nunsilp
Owner: K.Soros
Team Involve: ICS

AI for Sustainability in 2024

Solar Anomalies

The Future of Solar Energy in AI Era

AI-powered solutions are revolutionizing the way we generate, manage, and optimizing solar energy

Key Benefit Results

- Early Damage Alerts: 10-15 minutes advance warning
- Superior Performance: Exceeds guaranteed solar plant performance
- High Availability: 1-2% above the 98% availability guarantee
- Rapid Response: Less than 72-hour incident response time
- Cost Control: Optimized cost management efficiency
- Precise Maintenance: 99.99% adherence to preventive schedules



Solar Forecasting

Harnessing the Sun with AI

Quantifying day-ahead solar energy forecast uncertainty

By analyzing and forecasting data from solar panels, AI has provided insights into how to improve energy production and reduce costs



RO Performance Prediction

The Power of Data:

Using Analytics for Water Quality Monitoring and Surveillance.



Mission to The Sun Programs

Turning to Tech Company in 2024



MOBILIX: Pioneering the Way in Green Logistics with a Complete End-to-End Ecosystem



MOBILIX¹



EV Fleet Provision & Maintenance

- EV Fleet Rental
- After sale Service – O&M



Renewable Energy Solution Provider/ Private PPA

- Solar Rooftop
- Small Power Producers (SPP)
- Peer-to-Peer Energy Trading



E Roaming/ Charging Aggregator

MOBILIX Platform

- ✓ Route Optimizer
- ✓ Charging Driver App
- ✓ Roaming Platform
- ✓ Fleet Management
- ✓ Predictive Charging & Maintenance
- ✓ Battery Intelligence Management



EV Control Tower Solutions



Charging Business

- EV Public Charging Station
- EV Charger on Premise



Charging Ancillary Infrastructure

- Charger
- Battery Storage
- Energy Storage System



Charge Point Operating Service



Mobility As A Service

Remark: ■ EV Fleet Services ■ EV Charging Services

MOBILIX: Decarbonizing the Supply Chain

Officially introduced MOBILIX, Thailand's first green logistics solution developed under the concept of "Driving Sustainability in Motion" with a comprehensive electric vehicle ecosystem

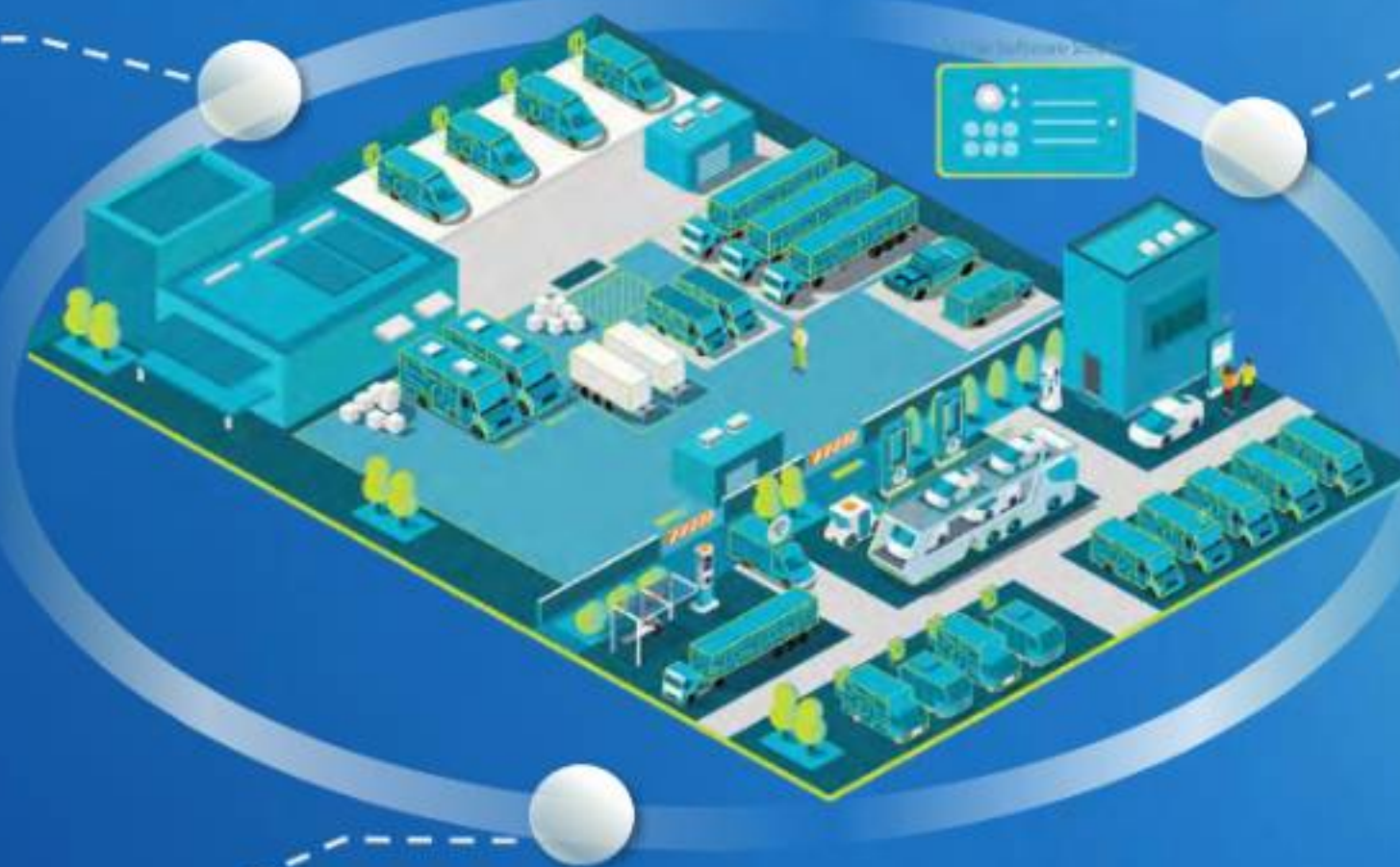
EV Rental Service

- EV fleet rental with after-sale services

Proposed Models



OEM Partners



MOBILIX Platform

- Intelligent digital platform for managing EV fleet and batteries



On Premise & Public EV Charging Solution

- Comprehensive charging solutions (on premise facilities and public charging stations) and equipment for both personal and commercial electric vehicles



Charging Location as of 1H24

- Laem Chabang 1
- Map Taphut
- WHA ESIE 1 Plaza
- WHA Tower



8 Super Fast Chargers

360 kWh

14 Standard Chargers

7 & 22 kWh

MOBILIX Platform

MOBILIX

Official Launched in Aug 2024

The **Mobilix Platform** is a comprehensive digital platform to enhance the efficiency and management of EVs and their batteries for business customers.

This platform integrates various services and technologies to support the entire EV ecosystem, providing end-to-end solutions for fleet management, route optimization, charging station integration and more.

Enhance operational efficiency, reduce costs, and improve customer satisfaction through advanced technology and seamless integrations.

- Manage and optimize the operations of EV fleets
- Monitor, control, and analyze various aspects of EV operations
- Predictive Charging & Maintenance with roaming network



MOBILIX – Performance

2Q2024 Achievements

- Our mission to boost EV adoption especially in Thai market is beginning to take shape

Secured Contracts
for Commercial EV ^{/1}

280 Vehicles



Strategic Initiatives & 2024 Target

Develop partnership with after-market, OEM, and mobility platform/car-rental companies



1,000 Vehicles



Launch new products e.g., new EV models, swapping solution, and digital products that support the EV ecosystem

Provide new commercial offerings in addition to BaaS and All-Inclusive services to deliver the best customer's experience



Expand sales channels through reputable fleet operators, manufacturers, construction companies, and others



Digital Health Tech : Making Healthcare Accessible Anytime, Anywhere with Digital Innovation

To integrate health technologies within the community and promote the long-term wellbeing of employees

WHA WELLNESS PLATFORM

- Teleconsultant with online doctor
- Omni Channel Support
- Corporate Wellness Dashboard
- Electric Health Record

PHARMACY

- Door-to-Door Pharmacy
- Self Pickup

OCCUPATIONAL MEDICINE

- Annual Health Checkup
- Health Analytic + Dashboard
- Knowledge Sharing

SMART CLINIC

- Onsite Tech Nurse
- Platform Facilitator
- Preliminary Health Check
- IoMT Connection

New Version & New Features Launched in 2024

WHAbit⁺

- Visualize health data
- Personalized suggestions

WHAbit insights

- Health management analytics
- Corporate Wellness program

WHAbit Fit

- Enhance employee's physical health
- Activity Measurement x Google Fit & Apple Health
- Virtual competitions & challenges

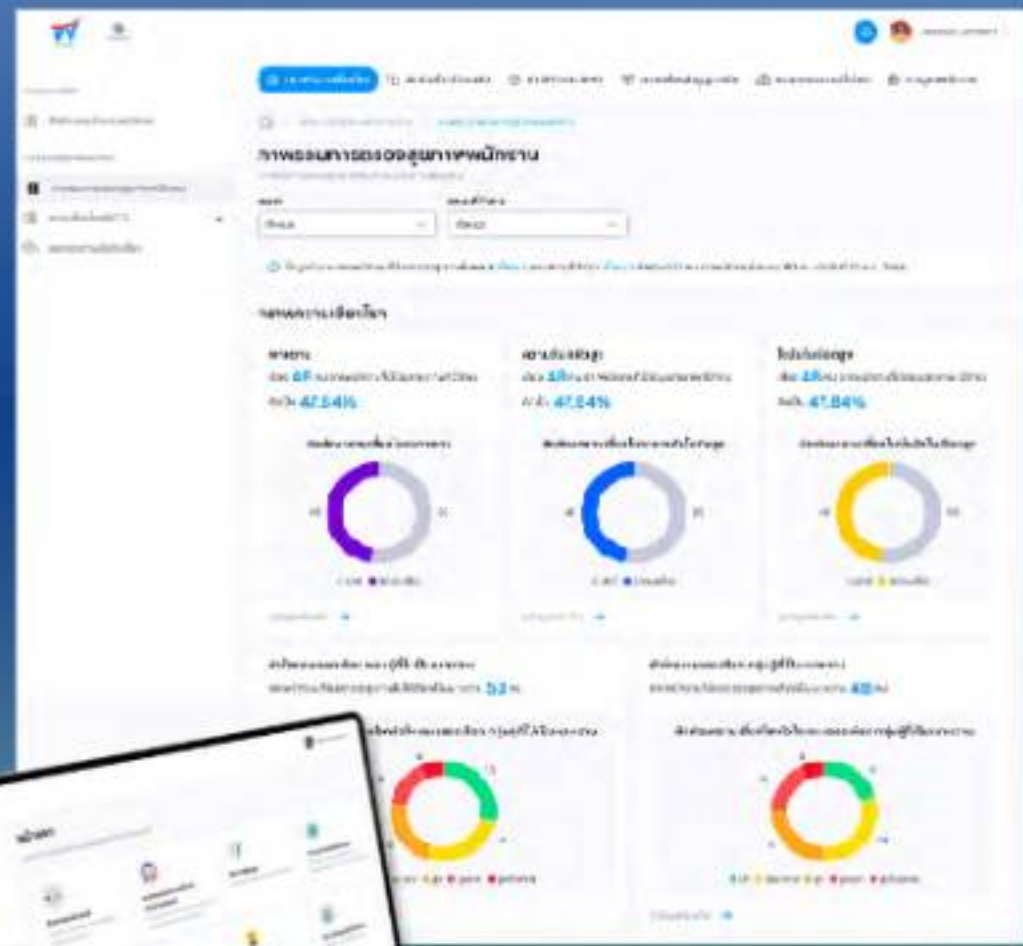
WHAbit - WellneVerse for All Wellbeing



Corporate Wellness Management



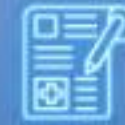
Health Report



Wellness & Fitness Engagement

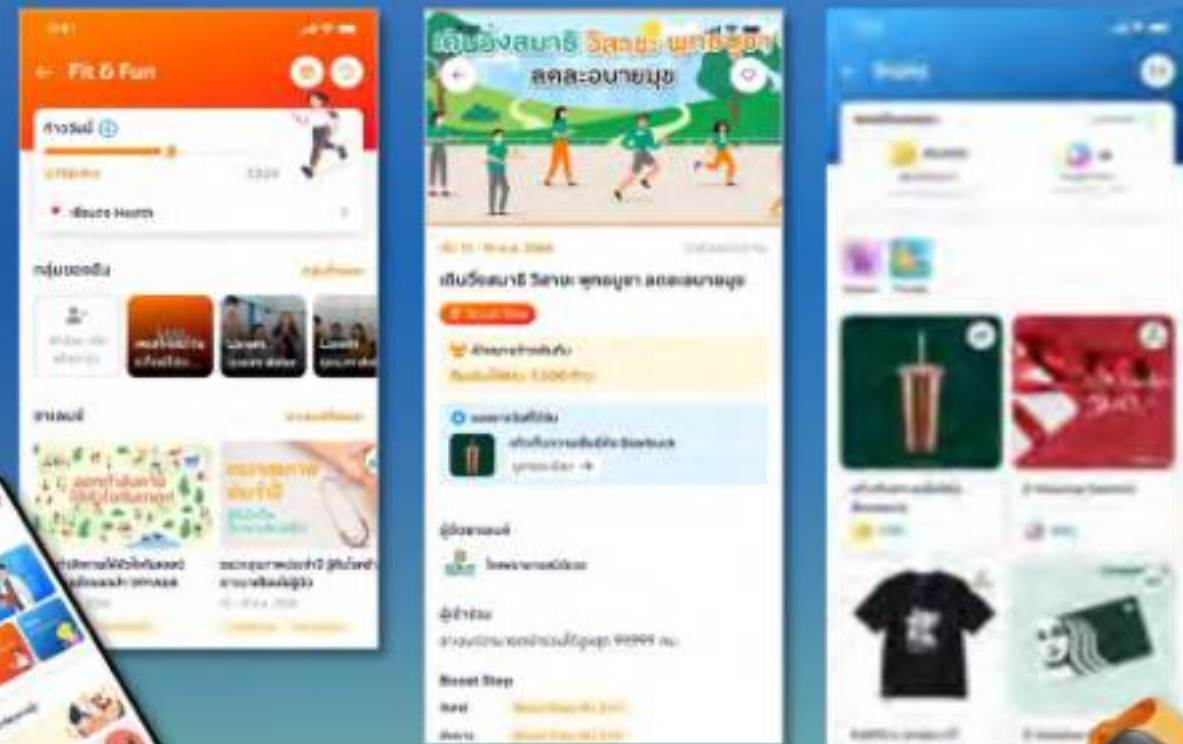


Fit & Fun



Health Content

Upcoming Feature
WHAbit Point
Redemption



Healthcare Access & Services



Telemedicine



Health Advice



Employees



Hospital

- Appointment
- Pre-screen
- Telemedicine
- Payment
- Pharmacy

WHA Circular Economy

Circular Economy Under “Mission to the Sun”

WHA CIRCULAR INNOVATION

>40 Circular Initiatives submitted from WHA business hubs



Transforming WHA Group’s business towards **Circular Economy** by implementing various **Initiatives** under Circular Economy Business Models to support our Sustainability and Net Zero mission

WASTE MANAGEMENT

Online Marketplace for Waste Generator and Waste Consumer



Aiming to **minimize waste to landfill**, the online marketplace connects waste generators, waste consumers and waste processors through comprehensive functions ranging from transportation management, payments, regulatory compliance and dashboard

WHA EMISSION TRADING

Carbon Credit Trading Platform

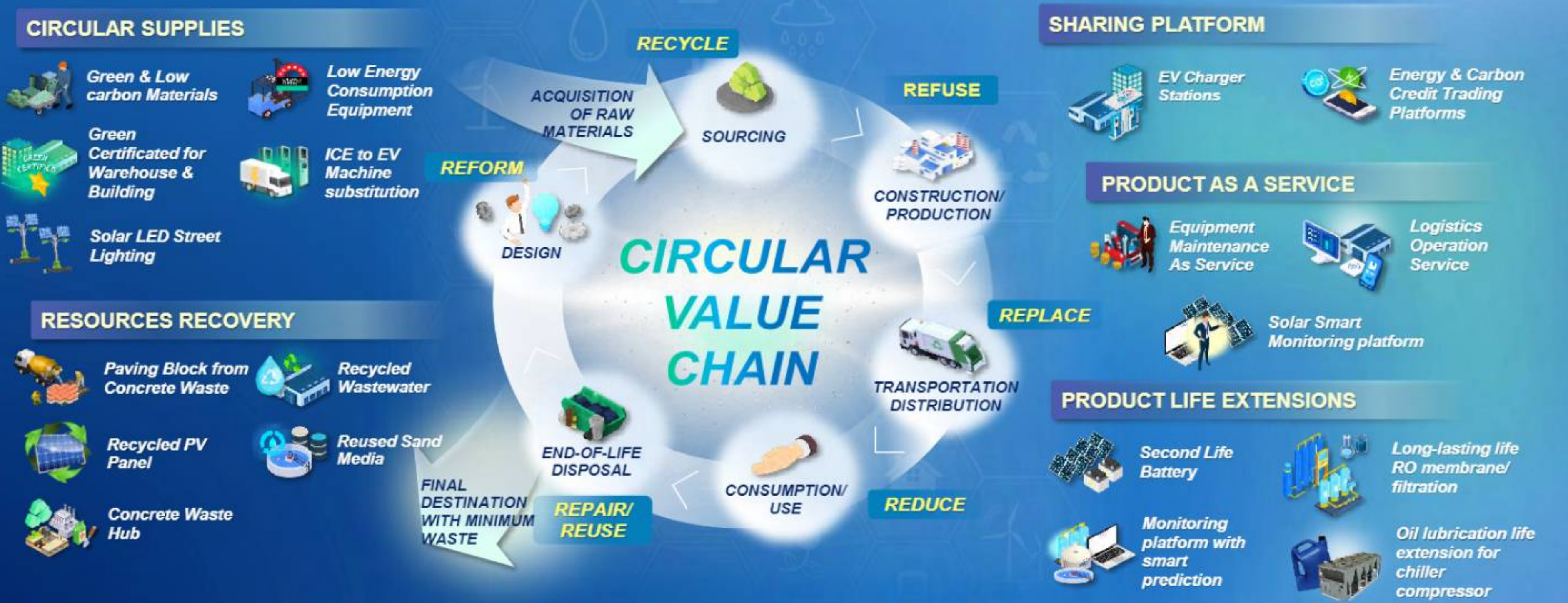


Platform for trading Renewable Energy Certificates

- ✓ Registration & Verification
- ✓ Matching; Transfer; Trading
- ✓ Billing & Settlement
- ✓ Redemptions for Reporting

WHA Circular Innovation

More than 40 initiatives are identified under 5 Circular Economy Business Models along our value chain



Circular Practices Shaping a Sustainable World

Innovative Circular Economy Practices Enhance Value Chains and Open New Business Opportunities

Materials & Waste

Concrete Waste to Paving Blocks



Description: Reuse the concrete waste from construction operations to be casted as paving blocks at multiple construction sites.

Impact: Reduction of 230 tons of waste in 2024 compared to traditional construction methods.

Optimize Chemical and Energy Usage at Water and Wastewater Treatment Plants



Description: Use monitoring dashboard and AI to optimize chemical and energy usage at WHA EIE and ESIE.

Impact: Reduction of chemical usage by 10% in industrial water processes, up to 20% for demineralized water, and up to 75% for reverse osmosis. Reduction of 120 tons of CO₂e.

Solar Panel Waste Recovery for Reutilization



Description: Sort and recover pallets, cardboard/carton, and copper cables for reuse, minimizing waste and supporting product supply.

Impact: Increased material recovery reducing waste generation and needs for virgin materials.

Energy

Developing Solar Energy Capacities for Clean Electricity Supply



Description: WHA won an ERC award to develop 5 large-scale solar plants, totaling 125 MW, after EGAT's bidding process.

Impact: By 2023, 109 MW of solar PV installed, targeting 50-100 MW annually, with 125 MW additional by 2029-2030.

Use Solar Energy at Water and Wastewater Treatment Plants



Description: Install solar floating and solar rooftop at water and wastewater treatment plants for electricity generation and self-consumption.

Impact: 0.8 MWp of solar capacities already installed, and another 1.6 MWp under development (2nd phase).

Green Logistics



Description: Provide rental and "Mobility-as-a-service" of electric vehicles logistic fleet and charging stations.

Impact: From 2023, 25 vehicles acquired and a target of 1,000 vehicles by 2024 with a network of 120 charging stations (or equivalent of a capacity of 43.2 MW DC).

Water

Wastewater Reclamation to Value-added Products



Description: Improve wastewater treatment for reuse as high-quality industrial water, integrating into existing or separate networks for specific uses.

Impact: By 2029, increase system capacity to treat 19.6 mcm/year, boosting sales, reducing natural water withdrawal, and minimizing environmental impact.

Minimize Non-revenue Water Loss



Description: Create District Metering Area (DMA) by installing devices including smart meter, pressure transmitter and Optical Character Recognition (OCR) to detect water losses promptly at ESIE and WHA CIE 1.

Impact: Reduce water loss (industrial water) from 0.10 to 0.48 million m³.

Meta W and Digital Twin



Strengthen *WHA Group's existing businesses*



Enhance *customers' experience*



Create *new opportunities*



New Business Model



Customer Centric: WHASApp

ALL services you need in WHASApp



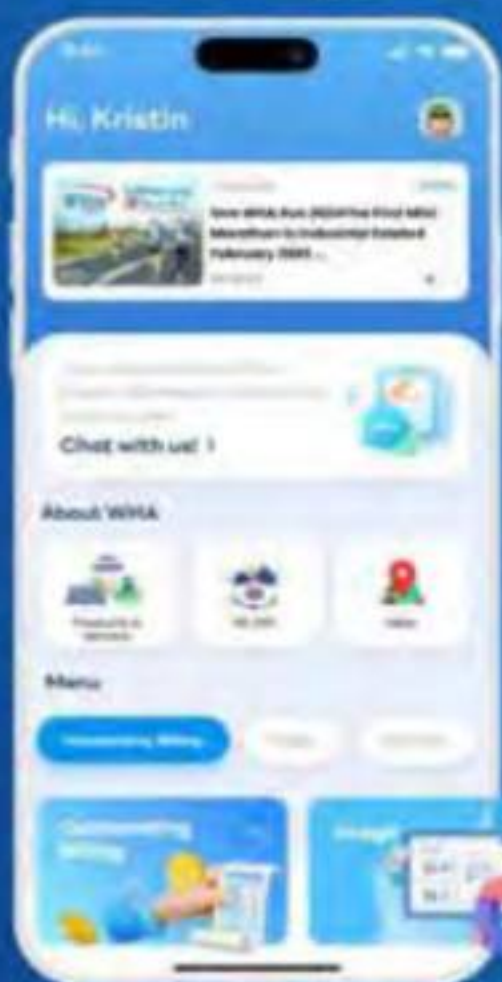
Commercial launch in July 2024

GENERAL

CONFIDENTIAL



ALL services you need in WHASApp



CHAT



Seamless customer support
Get the help when you need



BROADCAST



Prompt updates and alerts
directly to your fingertips



MAP & VR 360



Direction and virtual tour to
all locations of WHA



BILLING



Instant access to invoices
And payment status



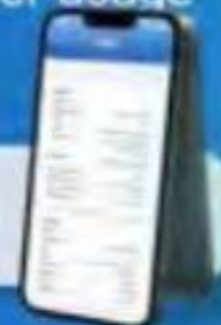
USAGE



Actionable insights of your
Utility & solar power usage



CONTRACT



Easy access to
contract information

Effortless communication

Seamless experience

Comprehensive support

Accessible information

Driving Innovation with Data: Cultivating a Culture of Insight at WHA



Data Clinic

- Promoting data-driven decision-making and strategy
- Employee discussion on data and AI utilization within the organization
- Opportunity to improve data handling and gain valuable insights
- Evaluating readiness for data-driven practices



Data Hackathon

"From Data to The Sun"



- To transform WHA into a technology-focused company driven by data
- leveraging the data to uncover valuable insights and provide visualization comprehensively for decision-making across various aspects



Data Driven The Series

Unlocking The Potential of AI & Generative AI

- The Era of AI & Generative AI
- Unleashing the Power of Generative AI
- Responsible AI in Action



Data Driven The Series Season 1-2

- Road to data driven organization
- Digital transformation with data analytics
- Storytelling with data
- Era of Data Science
- The Fellowship of Data



CORPORATE INNOVATION BOOTCAMP



Core Program

In order to validate pain points, create prototypes and test, we offer intensive innovation bootcamp driven by human-centric approach. The program aims to enhance internal team capability and equip innovative toolset and skillset for innovation creation

Expected Outcomes

Tested Prototype For New Business Idea



Problem Statement

"How might we leverage WHA's strengths & capabilities to deliver sustainability innovation which lead to WHA's sustainable growth?"



Examples of bootcamp projects that have successfully turned into existing businesses

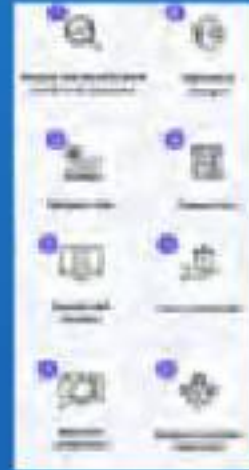
- WHA Circular
- Meta W
- LOEV Solar Powered Charger "LOEV"

Innovative Workplace

LEAN ORGANIZATION

Lean-improved & standardized "Accounting & Finance" and "Operation & Maintenance" process for maximum performance, efficiencies, and security and keep this program up to transform towards WHA Lean Organization

- ✓ Established standardized operations process
- ✓ Increased efficiencies and productiveness of end-to-end process
- ✓ Increased data integration capabilities between digital systems
- ✓ Increased data quality, and data visibility
- ✓ Increased less-paper process adoption (subject to governing laws)
- ✓ Reduced labor-intensive process time



PAPERLESS OFFICE

Scale digital online approval via WHA CDMS and digitize business operational paper forms via WHA Low-Code Development Platform throughout the enterprise, and adopt digital signature for procurement agreements to transform towards WHA Paperless Organization

- ✓ Increased operational efficiencies and productivity
- ✓ Obtain digital data to gain data insights
- ✓ Reduced operational cost (storage/ copying/ printing)
- ✓ Reduced risks of data breach
- ✓ Increased digital online approval for internal documents
- ✓ Adopted digital signature for procurement agreements



SMART WATER SOLUTION

Transform manual meter reading to automatic system by using smart devices and digital platform

Develop WHAUP's distribution system analysis by using operation experiences with GIS/Hydraulic model integration



NB-IoT Device "Optical Character Recognition (OCR)"
The solution to automate meter reading remotely
To enhance the Traceability of Utilities Provided



GIS & Hydraulic Model
Optimize water distribution system, Investigate water loss & Prepare for emergencies



Smart Metering

- Installed smart meter covering 80% of the water consumption in WHA EIE
- Integrated water consumption data with PTT's Online Meter
- Develop Web Application for customer to monitor water flow and pressure



CUSTOMER



WHAUP's smart meter web application

Revolution in Sustainability



Engaging Stakeholders with WHA's Commitments to a Sustainable Future for All



WELL-BEING

Striving towards a better quality of life for all living beings and environment for sustainability

WHA determines in combating climate change challenges

WHA achieved carbon neutrality in 2021 and target to achieve **Net Zero by 2050**

- Target to reduce scope 1 & 2 by 42% in 2023 and 90% in 2050
- Target to reduce scope 3 emissions intensity for investments by 74% by 2030 and 90% by 2050

Ensure an access to safe and clean water for community

Reclamation Water Project
Target to reduce usage of raw water by approx. 21 million m³ / year, equivalent to water usage of 575,340 people in 2027

- Reduce usage of raw water by approx. 7.3 million m³ / year, equivalent to water usage of 198,814 people in 2023



HUMAN PROGRESS

Enhancing human development across all sectors to evolve progressively

Uplift Thailand's GDP of more than 1.6 billion baht

Driving Economic Growth
with job creation and opportunities

- Create job opportunities over 200,000 jobs

Empowering and driving positive changes

Renewable Energy
Growing green energy portfolio

- Target to increase renewable energy signed PPAs to 450 MW in 2024 and 600 MW in 2026
- With 600 MW PPAs, revenue generation will be approx. 2,800 million baht per year



ACCESSIBILITY

Creating opportunities for everyone to access the essential elements which helps to improve the quality of life

Enhance access to medical care for all

WHAbit
Digital Healthcare

- Over 200,000 people in our community can access digital healthcare
- Increase healthcare reach by 30%
- Reduce health and medical expenses up to 10%

Provide access to education, healthcare, and safety for vulnerable children and family in construction sites

WHA and Baan Dek Foundation
with BSI Initiative Tools

- 88% infrastructure score increased from 38%
- 64% welfare score increased from -12%
- 70% healthcare score increased from 6%
- 36% education score increased from 4%

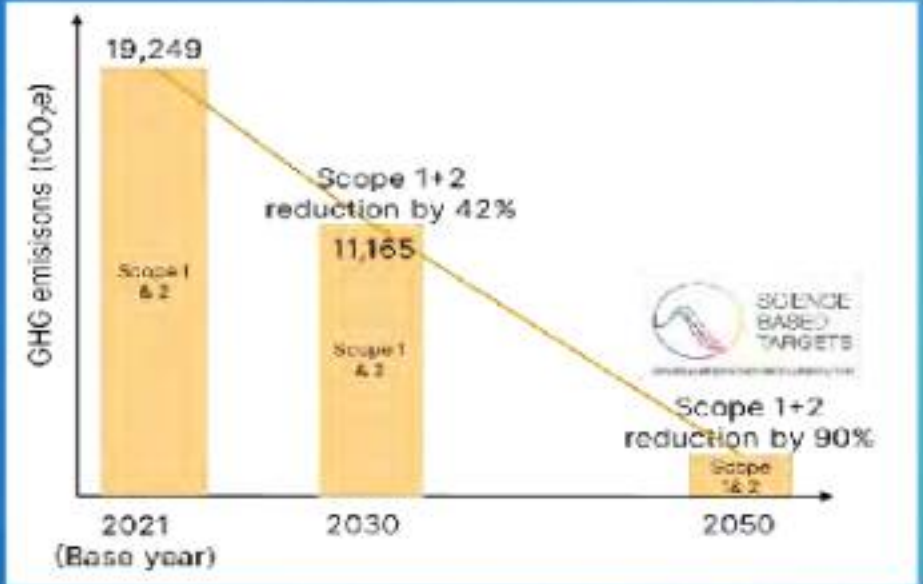
Our Net Zero Mission: WHA's Targets Aligned with SBTi for Climate Action

WHA Mission

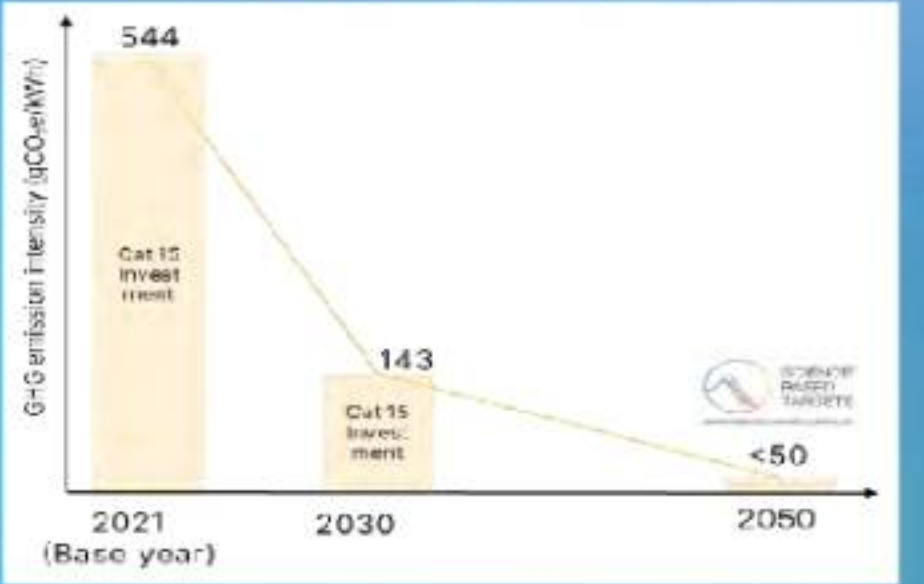
2050 NET ZERO GREENHOUSE GAS EMISSIONS

WHA has adopted the SBTi framework to establish targets, aiming to reduce absolute GHG emissions in Scope 1 and 2 by 42% by 2030 and 90% by 2050 and reduce Scope 3 emissions intensity for investments by 74% by 2030 and 90% by 2050

Reduce absolute emission scope 1 and 2 by 42% by 2030 and 90% by 2050



Reduce intensity emission of investment in power generation by 74% per kWh in 2030 and 90% by 2050



WHA achieved carbon neutrality since 2021

Tradeable
Offset the Emission



WHA GHG Emission (Scope 1&2)



WHA GHG Emission Offset from Grid Electricity Consumption per year

2023 Renewable Energy 311

Secured PPA Equity MW from Renewable Energy

All-in solar rooftop packages to industrial customers



Strategic Approach in Net Zero Transition Roadmap

Embrace the decarbonization roadmap to make decisions, reduce risks, and steadily work towards achieving net zero emissions



Decarbonization Starts with Ourselves



Expanding Renewable Energy Capacity for Our Operations, with a Particular Focus on the Utilities Business



Solar Floating and Solar Rooftop At Water Treatment Plants and Wastewater Treatment Plants

0.8 MW of solar capacities already installed, and another 1.6 MW (2nd phase) under development



Green Mobility in WHA Operations

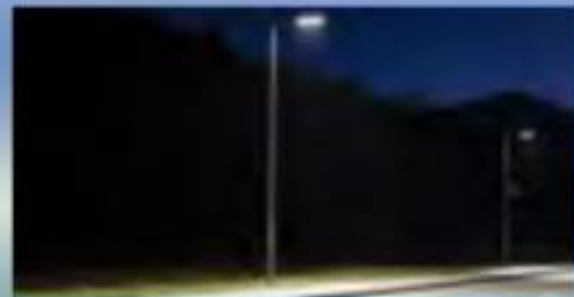


Utilize Electricity Vehicles for WHA Operation

Focus on transforming ICE to EV in own operations utilized in WHA own operations with the target of over 140 electric vehicles



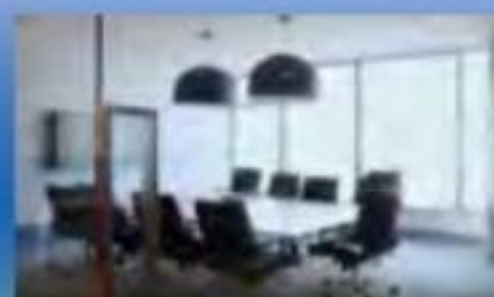
Energy Efficiency & Behavioral Change



Solar Street Lighting System



Solar for Tower Co System



Motion Sensor for Lighting System

Enhance energy efficiency through energy intensity reduction by supporting energy conservation and efficient use of energy

Empowering a Sustainable Future: Tackling Climate Change with Smart Energy Solutions

Enabling Our Customers with Clean Energy for a Greener Tomorrow

Provides a comprehensive solar rooftop service package for customers in Thailand, covering everything from permitting, design, and engineering to construction, installation, and ongoing operation and maintenance throughout the contract duration.



Commit to a long-term goal of delivering renewable energy

with a cumulative target of signing power purchase agreements for 450 MW by 2024 and 600 MW by 2026, contributing to CO2e GHG emissions

Additional Expansion of Our Renewable Portfolio

<p>COD in 2024</p> <p>Quality Minerals Lopburi Capacity 3.0 MW</p>	<p>COD in 2024</p> <p>Wisewoods Phetchaburi Capacity 2.1 MW</p>	<p>COD in 2024</p> <p>AutoAlliance (Thailand) Rayong Capacity 8.0 MW</p>
<p>COD in 2024</p> <p>Prinx Chengshan (Phase 2) Rayong Capacity 3.0 MW</p>	<p>COD in 2024</p> <p>APM Agro Ratchaburi Capacity 4.4 MW</p>	<p>COD in 2024</p> <p>SPM Group Bangkok Capacity 4.6 MW</p>
<p>COD in 2025</p> <p>Sahafarm Group Lopburi, Phetchabun Capacity 46.4 MW</p>	<p>COD in 2025</p> <p>KIRIU (Thailand) Rayong Capacity 12.3 MW</p>	

Environmental Savings

Year	GHG Emission Offset from Grid Electricity Consumption Per year
2021	26,400 tCO2e
2022	31,600 tCO2e
2023	51,500 tCO2e



With 600 MW PPAs of renewable energy fully operated there will be;

<p>Revenue generation of 2,800 MB per year</p>	<p>Customer savings on electricity costs of 930 MB per year</p>
-------------------------------------------------------	------------------------------------------------------------------------

Delivering Innovation & Smart Energy Solutions within WHA Ecosystem



P2P Energy Trading Platform



Won Utility Award in Category
"Most Innovative Energy Trading Service Platform"
 from International Finance Awards 2023



Project Progress :



Developing I-REC trading feature apart from electricity trading



EV Charging Station (Green Logistics)

Project Progress

- COD 4 Charging Locations Capacity of 2,880 kW
 - Map Ta Phut
 - Laem Chabang (1)
 - WHA Tower
 - WHA ESIE1 (Plaza)
- To COD 4 Charging Locations within Q3 2024 Capacity of 10,440 kW
 - Laem Chabang (2)
 - WHA Wangnoi km61
 - WHA Ladkrabang
 - GCL



Carbon Credit Portfolio

Thailand Voluntary Emission Reduction Program (T-VER)

- As of 2023, total of 48,576 tCO₂/year in Carbon Credit Portfolio
- Upcoming carbon credit in 2024, with target of 78,776 tCO₂/year



International Renewable Energy Certificate (I-REC)

- As of 2023, total of 4,000 REC/year in Carbon Credit Portfolio
- Upcoming carbon credit in 2024, with target of 103,000 REC/year

Exploring Other S-Curve Business



BESS



Hydrogen



CCUS



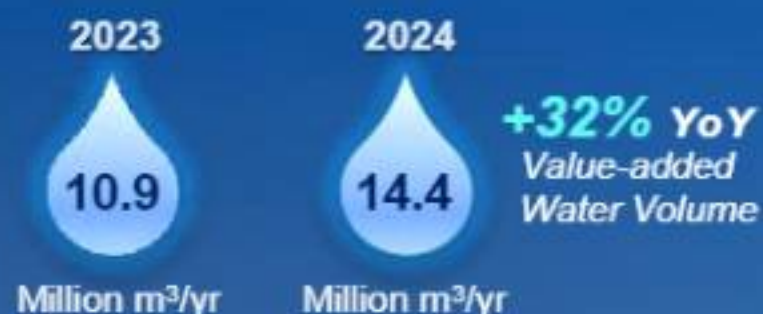
2nd Life Battery

Sustainable Water Resource Management for Long-Term Viability

Implementing a Sustainable Water Reclamation Strategy Using Circular Economy Principles

Provided Extensive Value-added Products

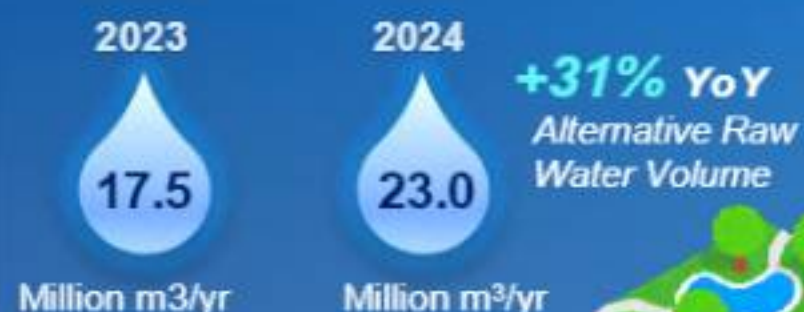
Contractual Volume of Value-added Water



Signed contract with GC for a total premium clarified water of 3.5 million m³/yr

Expand Alternative Raw Water Sources

Alternative Raw Water Supply Capacity Volume



Alternative Raw Water Sources

- Reservoir on WHAID's raw land
- Reclamation Water

2022 Outcome

Reduce the usage of water from nature
6,950,940
m³ / Year

Save cost on raw water by
THB 80 Million / Year

Equivalent to water usage of
190,410
People

2023 Outcome

Reduce the usage of water from nature
7,257,718
m³ / Year

Save cost on raw water by
THB 84 Million / Year

Equivalent to water usage of
198,814
People

2027 Target

Reduce the usage of water from nature
21,000,000
m³ / Year

Save cost on raw water by
THB 242 Million / Year

Equivalent to water usage of
575,340
People

Key Benefits

- **Substantially decrease** the volume of wastewater released into the environment.
- **Lower the government's investment budget** for developing water storage and distribution systems.
- **Minimize conflicts** between communities and industries over water resource allocation.
- **Provide high-quality water** at a competitive price. Industrial operators in WHA's industrial estates benefit from comprehensive utility services with a diverse range of products.



2024 Key Sustainability Targets and Goals



Green Logistics



1,000 Electric Vehicles help reduce GHG emission of **14,400** Tons Co2 Equivalent / Year

Equivalent to planting trees over **14,000** Rai of Land (1,600,000 Trees)

Water Resources



Reduce the usage of water from nature **8,285,000** m³ / Year
Save cost on raw water by THB 96 Million / Year

Equivalent to water usage of **226,985** People

Digital Health Tech



Over **200,000** People in our community can access digital healthcare

Increase healthcare reach of **30%**

Potentially reduce health and medical expense up to **10%**

A Partnership for Change: WHA and Baan Dek Foundation Unite for a Better Future with BSI Initiative



Building a sustainable future starts with ensuring vulnerable children in construction camps access essential infrastructure, welfare, healthcare, and education

Overview of Social Sustainability Development and Changes in Key Framework Actions



Infrastructure



Welfare & Services



Healthcare



Education



2024 Outcome

Year-to-Date Assessment Score Results

- **88%** infrastructure score increased from 38%
- **64%** welfare and services score increased from -12%
- **70%** healthcare score increased from 6%
- **36%** education score increased from 4%

- ✓ Developed sanitation and environmental health systems
- ✓ Improve wastewater treatment and drainage system
- ✓ Developed learning spaces for children

- ✓ Training on labor rights and domestic violence prevention
- ✓ Process in place to educate migrant workers in their own language
- ✓ Access to assistance on human rights issues

- ✓ Promote basic health knowledge and implement health services
- ✓ Monitor major infectious diseases and seasonal epidemics
- ✓ Climate change impact and heatwave prevention

- ✓ Followed Thailand's "Education for All" policy
- ✓ Knowledge dissemination to migrant workers
- ✓ Educated parents about enrolling in schools
- ✓ Help identified nearby schools

Solar Energy for Schools: Promoting Clean Energy, Driving Down Costs of Electricity

Shine Brighter with WHA

Solar Rooftop for the School By Dr.Somyos Anantaprayoon Foundation x WHA



The 'Shine Brighter with WHA' project aims to install and deliver solar panels to the following schools in WHA industrial estate areas

- Nikom 9 School, Makham Khu, Rayong
- Nikom 3 School, Nikompattana, Rayong
- Ban Nonglalo School, Nonglalo, Rayong

The project supports education, reduce school electricity costs, and promote clean energy use. WHA is committed to building a society of sharing, caring, and sustainable growth, aligned with our promise: WHA – The Ultimate Solution for Sustainable Growth

School	Nikom 9 School	Nikom 3 School	Ban Nonglalo School
Installed Capacity	10.45 kWp	18.75 kWp	11.25 kWp
School Electricity Cost Decreased by (Baht per month)	6,000	10,000 – 12,000	5,000 – 6,000
School Electricity Cost Decreased by (Baht per year)	↓ 72,000	↓ 120,000	↓ 60,000
*GHG Emissions (tons CO ₂ e/ year)	↓ 6.58	↓ 11.81	↓ 7.09
*GHG Emissions (tons CO ₂ e) for over 25 years	↓ 151.46	↓ 271.75	↓ 163.09

*Note: Estimated from carbon baseline 0.4758 tCO₂/Mwh announced by Thailand Greenhouse Gas Management Organization (Public Organization)



Building Community Growth with Jobs and New Opportunities



WHA Group continues to actively support communities through a range of impactful activities

WHA Pan Gan Project



WHA Group hosted the 'WHA PAN GAN MARKET' at ESIE Plaza 1 in Rayong, featuring 16 community stores selling local products.



WHA Group supported WHA PAN GAN shops at AAT Market Fairs, boosting community income.



The 'Chuen Chawa' brand from Bachakmahad Community, using materials from WHA Constructed Wetland, won EEC Select 2023 and will feature at the Nai Lert Flower and Garden Art Fair 2024. WHA also purchased products for New Year gifts and provided selling booths, contributing 1,000,000 Baht, involving 60 stores from the WHA PAN GAN project.



2023 Outcome

98% satisfaction score from the community that joined WHA Pan Gan Project

98% satisfied that WHA Pan Gan help generate more income

100% happy to join activities with WHA

WHA E-Job Pool



WHA Group supports companies in WHA Industrial Estates by announcing job vacancies via the 'WHA E-Job Pool'.

An online platform matching recruitment needs with job seekers' qualifications.

Graduates and job seekers can find job openings at www.wha-industrialestate.com.

Outcome

2022

2023

As of 2024

Generating over **583** Jobs Opportunities / Year

Generating over **600** Jobs Opportunities / Year

Generating over **650** Jobs Opportunities / Year

Contributing to Employment Valued at Over **105** Million Baht / Year

Contributing to Employment Valued at Over **108** Million Baht / Year

Contributing to Employment Valued at Over **117** Million Baht / Year



Social Engagements for Climate Solutions

WHA Joins Forces with Partners in Social Initiatives to Drive Down Global GHG Emissions

“ Let’s Zero Together ”

WHA Group Tree Planting Activities

- In 2023, planted 29,030 trees area of 101 Rai, with GHG reduction of 261 tons CO₂e at WHA ESIE2 & WHA EIE
- In 2024, planted 15,555 trees, area of 11 Rai, with GHG reduction of 140 tons CO₂e at WHA ESIE2 and WHA EIE



Total amount of trees : **44,585 trees**

Total Expected GHG Reduction : **401 tons CO₂e**

“ WeCYCLE Project” WHA x PTTGC



This project promotes the upcycling of used PET bottles combined with water hyacinth collected from WHA Group’s wastewater treatment pond to produce upcycle products to supply to stakeholders in our communities

WeCYCLE



QVIRA Pillowcases



Laptop Case



Hamper



School Backpacks

Total amount of used PET bottle : **53 tons**

Total GHG Reduction : **102 tons CO₂e**

“กระดาษเก่าเราขอ” WHA x SCGP

This project collects used paper from WeCYCLE members and distribute to SCGP paper station for recycle process and recycle product is designed by WHA and Thai Container Group



WeCYCLE



Recycle Edutainment bookshelf

Total amount of paper : **57 tons**

Total GHG Reduction : **168 tons CO₂e**

“เชือดทอดเราเทิร์น” WHA x BSGF

This project collects used cooking oil from WeCYCLE members and converts it into sustainable aviation fuel, in line with the BCG policy, for distribution to Bangchak

New Project in 2024



Total amount of cooking oil : **0.56 tons**

Total GHG Reduction : **0.18 tons CO₂e**

Outcome



From WeCYCLE and tree planting Year 2022

From all activities Year 2023

From all activities Year 2024

GHG Emission Offset from Social Activities

Remark: All information updated as of August 2024

WHA Shaping the Future Through Education and Career Opportunities for Youth



WHA Annual School Contribution Program

Continuing our tradition of over **26 years**, WHA Group, in collaboration with our valued customers and suppliers, has consistently supported students from low-income families.

Over 156,000 students have received WHA school bags through the Annual School Contribution Program.

In 2024, the initiative successfully delivered school bags to over **26,000 students** across **75 schools** near WHA Industrial Estates.



School Bags Contribution

WHA aims to assist with the living costs of parents while also supporting our children. In 2024, the program reached more than 26,000 students across 75 schools near WHA Industrial Estates.



WHA Scholarship Program

In 2023, WHA Group supported education by awarding scholarships worth 693,000 baht to students from kindergarten to high school, including those whose parents were impacted by the COVID-19 pandemic, in schools around WHA Industrial Estates.



WHA Fellowship Program

Since 2021, WHA has supported primary school teachers in various fields within industrial estates in Rayong and Chonburi provinces, providing financial support totaling 1,260,000 baht to teachers from 7 schools.



WHA Full Board Scholarship

For over 14 years, WHA Group has provided full board scholarships to 124 students facing financial difficulties. In 2023, WHA awarded scholarships to 13 Higher Vocational School students, many of whom later joined WHA Industrial Estates companies, and one scholarship to a future teacher at Bankhai Technical College.



WHA School Improvement Program

WHA Group organized activities for employees to support educational institutions. WHA staff volunteered to paint school buildings, enhance cleanliness and appearance, improve outdoor areas for early childhood development, and develop schools near the estate.

Key Takeaways on How WHA Leveraged Opportunities for Success



GLOBAL GEOPOLITICAL & ECONOMIC ADJUSTMENT

TECH-ENABLED & SOCIAL EVOLUTION

SUSTAINABILITY & CLIMATE-DRIVEN ENERGY TRANSITION



WHA LOGISTICS BUSINESS

2,988,762 sqm
Asset under Owned & Managed
67 Strategic Locations
>200 Well-known Tenants Profile



WHA INDUSTRIAL DEVELOPMENT BUSINESS

77,600 Rai of Land
12 Industrial Estates
1,052 Customers



DIGITAL & AI TRANSFORMATION

>38 digital transformation projects
12 AI transformation projects
>50 applications



WHAbit (Digital Healthcare)

Over 200,000 people in our community can access digital healthcare and reduce medical expense up to 10%



MOBILIX (GREEN LOGISTICS) (New Business)

1,000 electronic vehicles help reduce GHG emission of 14,400 tons Co2 equivalent / year



GROWING GREEN ENERGY

364 MW (▲118% YoY) signed PPA of renewable energy in 1H2024, targeting 450 MW in FY2024 and 600 MW in 2026



WHA UTILITIES BUSINESS

178 mm m3 normalized Water Sales & Management
+32% YoY Value Added Volume
+31% YoY Alternative Raw Water



WHA POWER BUSINESS

932 MWeq Secured PPA
682 MWeq Installed Equity
210 MWeq Under Development



WHAApp

Customer-centric platform ensuring a user-friendly experience, providing effortless communication, comprehensive support, and more



META W & DIGITAL TWIN

Enhance customer experience through seamless communication with advanced technologies to provide users with efficient and real-time interactions



NET ZERO TARGET IN 2050

Reduce scope 1 & 2 emissions by 42% by 2030 and by 90% by 2050 and scope 3 emissions for investments by 74% by 2030 and by 90% by 2050



WATER CONSERVATION

Reclaimed & demineralized water volume ▲32% YoY, targeting to reduce water usage from nature 21,000,000 m³/year in 2027



WHA DIGITAL BUSINESS

MOBILIX platform launched
WHAbit new version launched
WHAApp commercial launched



1H2024 GROWTH ACHIEVEMENTS

+28% Revenue & Share of profit
+91% Net Profit +55% EBITDA
1.13 times Net IBD/Equity



INNOVATION CULTURE

Emphasizes collaboration, agility, and forward-thinking, empowering employees to explore new ideas that drive business growth and enhance customer experience



BUILDING SOCIAL IMPACT

▲88% infrastructure score
▲64% welfare & services score
▲70% healthcare score
▲36% education score



RE100 RENEWABLE ENERGY

Scope 1 & 2 has been fully offset by RE emission savings since 2021



CIRCULAR ENABLER

Committed to S-T & L-T goals across materials, waste, energy, water, nature, and climate, supported by new business opportunities and over 40 initiatives and innovations

Q & A

Appendix



Logistics Business

#1 Built-to Suit (BTS) Warehouse and Factories

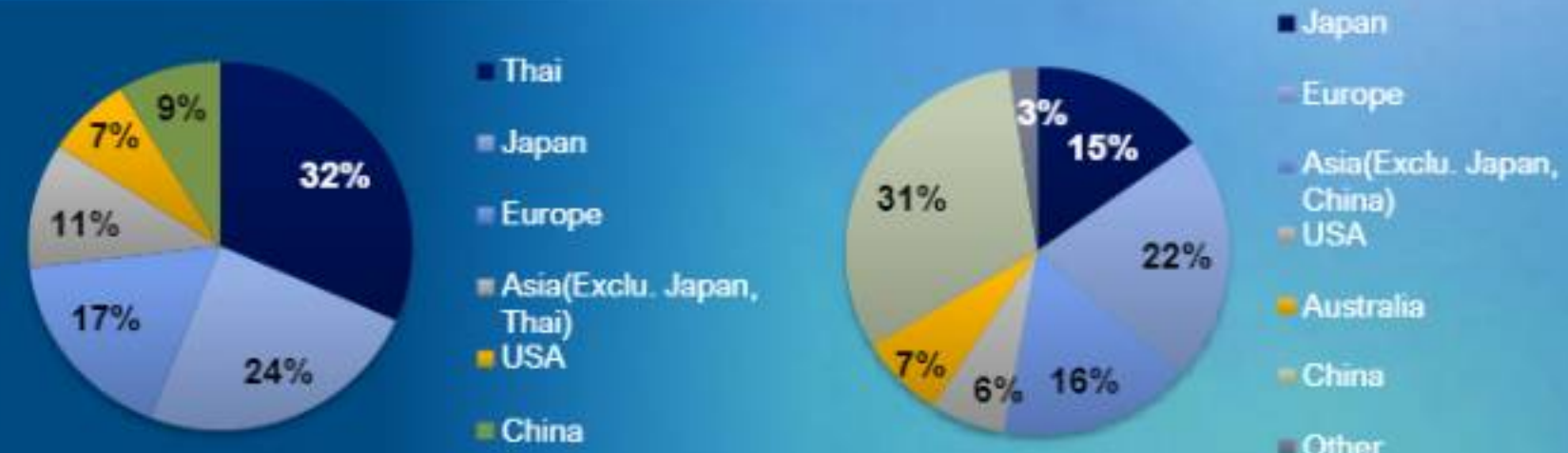
World Class standard warehouse and factories built to specific client's requirements

200+ Well-known Tenants Profile

67 Strategic Locations



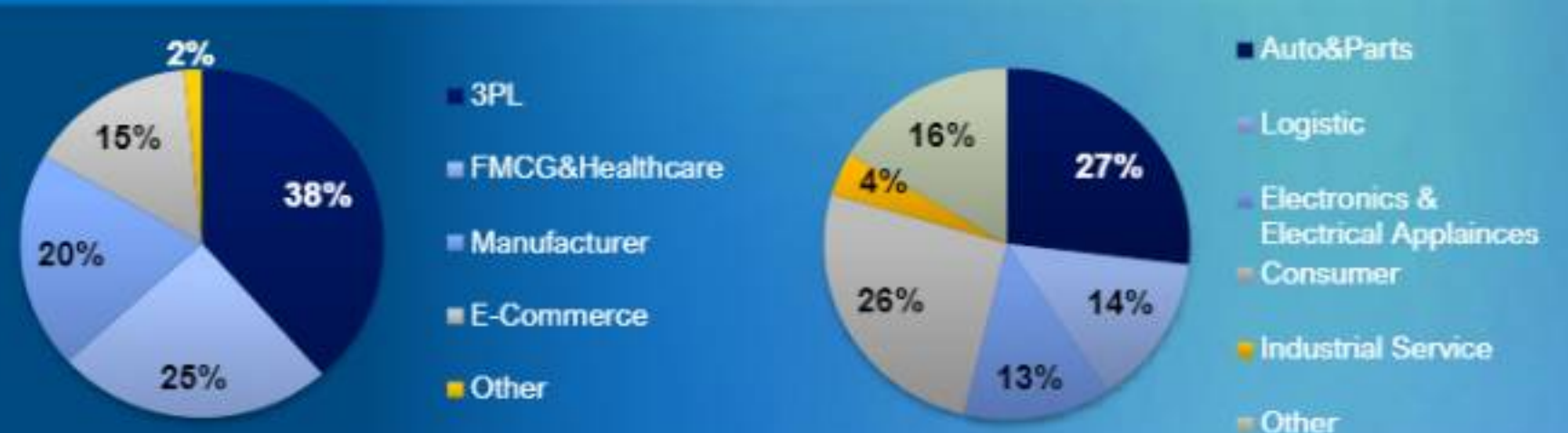
Customer by Nationality



Logistics Properties Business

Industrial Properties Business

Customer by Industry



Logistics Properties Business

Industrial Properties Business

Remarks:
 /1 Including New Rent and Net Rent Under Ready-Built Properties (Include asset of WHAIR and HPF) and Built-to-suit Properties and Gross rent which include asset of WHART
 /2 Gross rent which include asset of WHART
 /3 Include newly-built RBF&RBW

Industrial Development Business

77,600 Rai of Total Area ¹

2,500 Rai of Large Industrial Land Available for Sale ²



13 ³ Industrial Estates



Our Customers in Thailand and Vietnam

As of 30 June 2024

1,052

Customers ¹

1,640

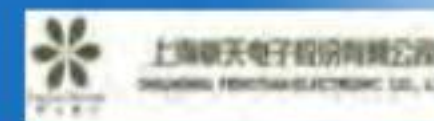
Contracts ²

% of Number of Customers by Nationality*

Overall Portfolio 2020-1H24

Nationality	Overall Portfolio	2020-1H24
Japan	27%	6%
China	21%	65%
Thailand	15%	7%

Recent Customers



% of Number of Customers by Industry*

Overall Portfolio 2020 – 1H24

Industry	Overall Portfolio	2020 – 1H24
Automotive	31%	27%
Consumer Products	18%	28%
Electronics & Electrical Appliances	10%	16%

Remark: ¹ Information as of 30 June 2024, equivalently to 12,700 hectares including 56,700 Rai (9,070 Hectare) operating and under development in Thailand and Vietnam

² Include land under development which plan to be completed in 2024

³ Including WHA IER (under construction)

⁴ WHA CIE1, WHA CIE2, ESIE, WHA ESIE1, WHA ESIE2, WHA ESIE3, WHA ESIE4, WHA RIL, WHA SIL, WHA EIE, WHA Rayong 36, WHA IER (under construction)

Remark: *Accumulated customers and contracts based on land sales, land rent in Thailand and Vietnam

¹ Including 26 customers in Vietnam

² Including 28 contracts in Vietnam

Utilities and Power Business

Water Product/Services & Capacity

Raw & Industrial Water

Wastewater Treatment

Municipal Water

Reclaimed & Demineralized Water



Conventional Power Plant

528 MWeq of Existing Conventional Power Plants

Renewable Energy

Solar
132 MWeq COD
 210 MWeq Under Development
 40 MWeq to-be signed PPA

Industrial Waste to Energy
3 MWeq COD

Hydro
19 MWeq COD

Natural Gas

Operating Projects – WHANGD 2 and WHANGD 4
 Under Development – EIA Approved for WHANGD 3

Digital Technology Business



Empower WHA Business to Enhance Operation

Support digital transformation initiatives to adopt new technologies to:

- Increase productivity and efficiency
- Enhance operation reliability and efficiency



WHA Web Portal



Easy Invest app for WHA Vietnam



LBDMS

Building management system for Logistics



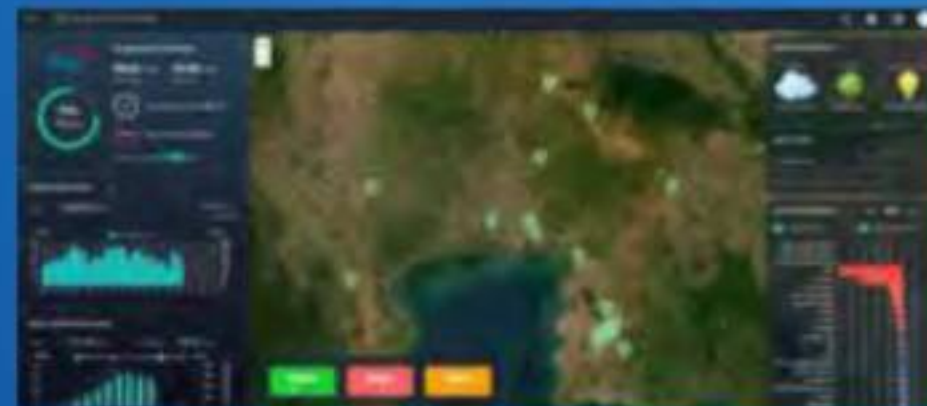
outsystems

Low-Code software to develop applications

Collaborate with WHA Group to Create New Value-Added Products for Customers

Create new products that meet the Group's customer needs. Key technologies include:

- Low code development application
- IoT Platform: loX



Solar Rooftop Monitoring Dashboard and Performance Detection Devices for WHAUP



To monitor performance of client's solar panels

Explore New Business Streams for WHA Digital

Generate innovative products & services for internal and external of WHA Group's ecosystem



Building new businesses



Mobilix Platform

WHA Green Logistics - EV Digital Operations Platform

- To commercial launch Mobilix Platform to Green logistics customers in 2024



WHAbit

Empowering the industrial sectors through digital healthcare

- To commercial launch WHAbit to industrial estate customers in H1 2024 & Expand to Corporate in H2 2024
- To develop the function for point redemption in Q3 2024



WHASApp

Customer Centric Digitalization of internal processes

- To commercial launch WHASApp to customers in July 2024



WE SHAPE THE FUTURE

