

“SET Awards 2025” Sustainability Excellence



Ms. Jareeporn Jarukornsakul

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

11 September 2025

Speaker Biography

Ms. Jareeporn Jarukornsakul
*Chairman of the Executive Committee and Group
Chief Executive 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
 - Nomination Remuneration Committee
- **SCB X Public Company Limited**
 - Group Chairman Committee
 - Executive Committee
 - Director
 - Member of the Nomination, Compensation and Corporate Governance
- **The Siam Cement Public Company Limited**
 - Independent Director
 - Member of the Governance and Nomination Committee

DEGREE OBTAINED

- Bachelor of Public Health, Mahidol University
- Master of Business Administration (English Program), Bangkok University
- Honorary Ph.D. (Arts), Logistics & Supply Chain Management, Christian University
- Doctor of Philosophy Honoris Causa on Occupational Health and Safety, Mahidol University
- Honorable Ph. D., Business Management, Western University
- Honorary Doctorate Degree of Arts in Entrepreneurship, Bangkok University
- Honorary Degree of Doctor of Business Administration, Ramkhamhaeng University

AWARD

- Mahidol Thayakorn Award 2018 for the most outstanding Mahidol Alumni from Mahidol University Alumni Association under the Royal Patronage of His Majesty the King winners list
- Outstanding ASEAN Women Entrepreneurs 2018 Award Thailand TOP Company Awards 2017 (Warehouse Development Company) by the University of the Thai Chamber of Commerce and Business Plus Magazine
- Frost & Sullivan Thailand Excellence Award 2017 (Warehouse Development)
- Quality Persons of The Year 2016 (Section : The Property Developer), Foundation of The Scientific and Technological Council of Thailand (FSTT)
- Woman Entrepreneur of The Year 2016 by Asia Pacific Entrepreneurship Awards
- Thailand Corporate Excellence Awards 2015 by Thailand Management Association
- Outstanding Alumni of Faculty of Public Health 2015 by Mahidol University
- Bangkok University Alumni Award 2020, hosted by the BU Alumni Association
- AMCHAM CSR Excellence Award 2022
- Eco Industrial Town Awards in Eco Champion Level at ECO Innovation Forum 2022
- Best Managed Company Thailand 2022 from Deloitte Thailand
- Thailand Top CEO of the Year 2022 Award from Business Plus magazine and the Faculty of Commerce and Accountancy, Thammasat University
- Commended Sustainability Awards at SET Sustainability Awards Ceremony 2022
- Distinguished Award in Corporate Management Excellence at Thailand Corporate Excellence Awards 2022
- IEEE PES Women in Power Award 2022
- Digital Entrepreneur of the Year at Prime Minister's Digital Awards 2022

TRAINING

- Subsidiary Governance Program, Thai Institute of Directors Association (IOD) (SCP6/2023)
- Role of Chairman Program, Thai Institute of Directors Association (IOD) (RCP46/2020)
- National Defense Course (NDC60), National Defense College
- Thailand Energy Academy (TEA9/2017)
- Corporate Governance for Capital Market Intermediaries, Thai Institute of Directors Association (IOD) (CGI17/2016)
- Director Certification Program, Thai Institute of Directors Association (IOD) (DCP210/2015)
- Senior Executives on Justice Administration Program, National Justice Academy, Office of Judiciary (BYS 20/2015)
- Executive Program, Capital Market Academy (CMA) (CMA18/2014)
- Director Accreditation Program, Thai Institute of Directors Association (IOD) (DAP 94/2012)



“Be market leader in aligning vertical integrated logistics facilities provider, total solution industrial estates, utilities, power, and digital infrastructure platforms with high quality capturing throughout value chain in Asia”

WHA Group : Empowering Growth, Embracing Challenges



WHA Group Vision



“ทุกที่ที่ดับบลิวเอชเอไป เราไปเพื่อ **“สร้าง”** ...

สร้างความเจริญ สร้างอาชีพ สร้างรายได้

ให้กับสังคมเพื่อความอยู่ที่ดีขึ้น

สู่เป้าหมายสูงสุด

นั่นคือการพัฒนา เพื่อการเติบโตอย่างยั่งยืน”

WHA: WE SHAPE THE FUTURE



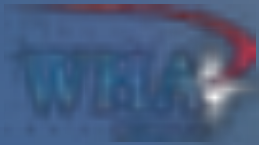
Our Purpose



“WHA: WE SHAPE THE FUTURE” reflects WHA Group's commitment to play a pivotal role in driving Thailand forward with economic efficiency and sustainability by creating career and income opportunity for people as well as a bringing better quality of life and enhancing human development; aligning with the Group's business direction to become “The Ultimate Solution for Sustainable Growth”



WHA: Unlocking Future Growth with Strong Business Foundations & Outstanding Performance



2024 Financial Performance



Normalized Revenue & Share of Profit

14,303

Million THB

Normalized Net Profit

4,526

Million THB

Normalized EBITDA Margin

58%

Net IBD/Equity

1.04

Times

1H2025 Operating Performance

Asset under Owned & Managed

3,163,552

SQM

(WHAID 829,486 SQM)

New Projects & Net Rent

123,237^{/1}

SQM

(WHAID 62,519 SQM)

(Contract Value : THB 2,153 mm)

Asset Monetization

32,524

SQM

Mobilix

372

Leased Vehicles^{/2}

34

New Vehicle Leases^{/2}

30

Chargers Installed



Total Land Sales

1,105

Rai

Ready built Factory and Warehouse Under Owned & Managed

829,486

SQM

Utilities Sales & Management Volume

80^{/3} Million M³

Secured PPA Equity MW

991

MW



>40

Digital Transformation Projects

12

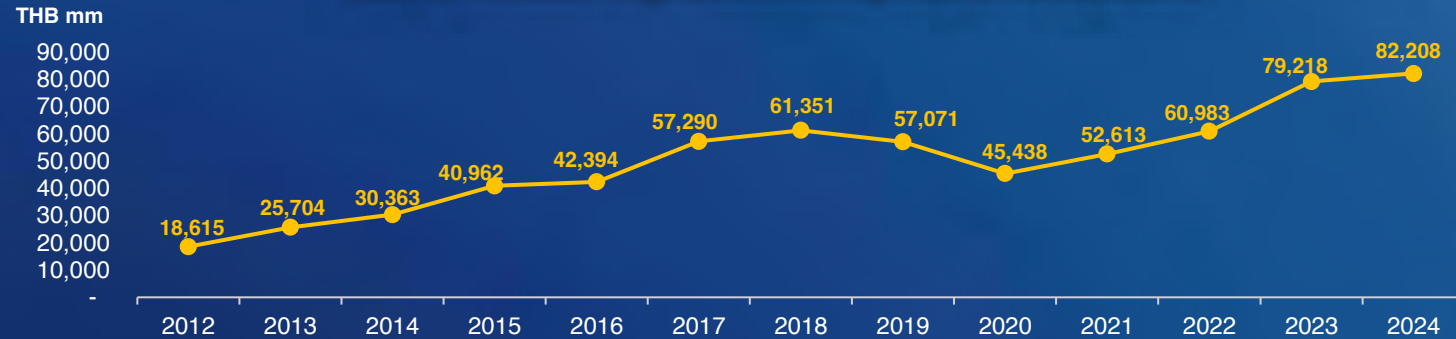
AI Transformation Projects

Remark : ^{/1} Including BTS, RBF and RBW ^{/2} Including both vehicles and chassis ^{/3} Including 19 million m3 water sales and treatment volume from Vietnam

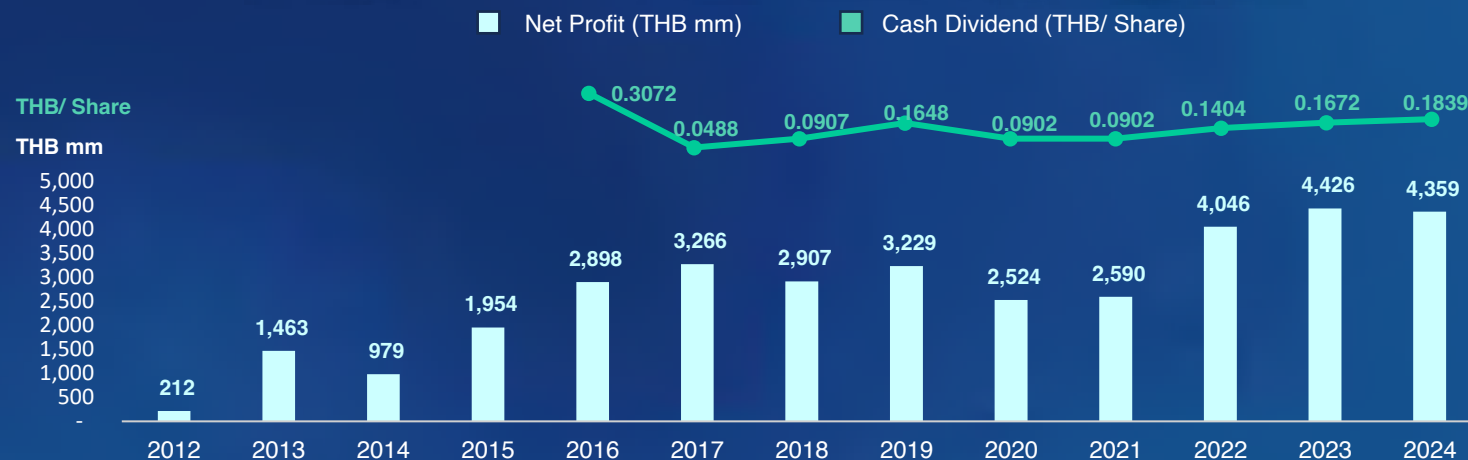
Our Sustainable Growth via the Capital Market



WHA's Market Capitalization from 2012 to 2024



WHA's Net Profit and Cash Dividend from 2012 to 2024



Source: Bloomberg

Our REITs and Property fund surpassed **76 billion THB** in value and continue expanding...



Global Megatrends and Opportunities

Leveraging Global Trends to Build Our Strategy and Create Growth



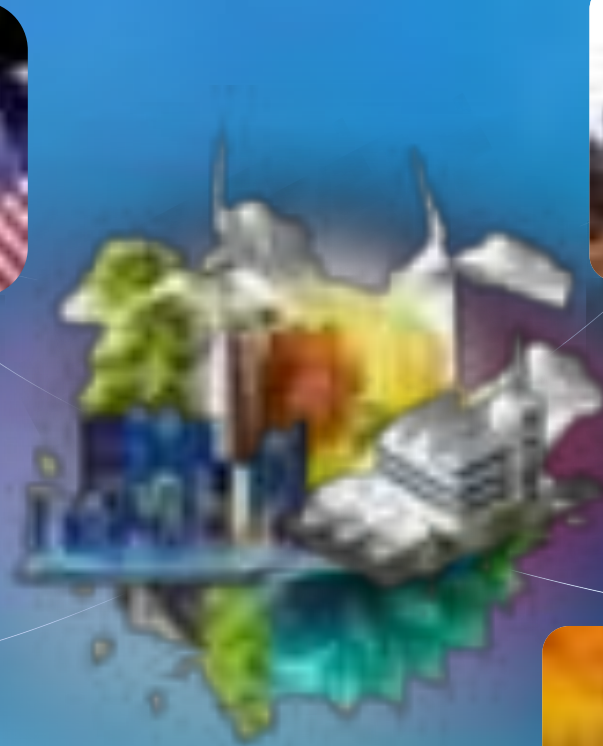
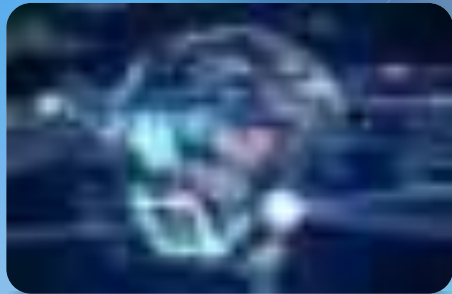
TRUMP 2.0 & HIS POLICIES

Trump's returning to White House with his "American First" policies and transactional diplomacy are expected to heighten the conflicts and uncertainties in global economy



TECH DOMINATION

A wave of new technologies such as AI and blockchain are transforming the way of doing businesses



GEOPOLITICAL TENSION

Global Decoupling become more and more imminent. Conflicts among countries significantly impact international trade and capital flows



SUSTAINABILITY & CLIMATE CHANGE

Consumption of resources constitutes a threat to the environment. Corporations increasingly demand for Green Businesses

Trump's Reciprocal Tariff

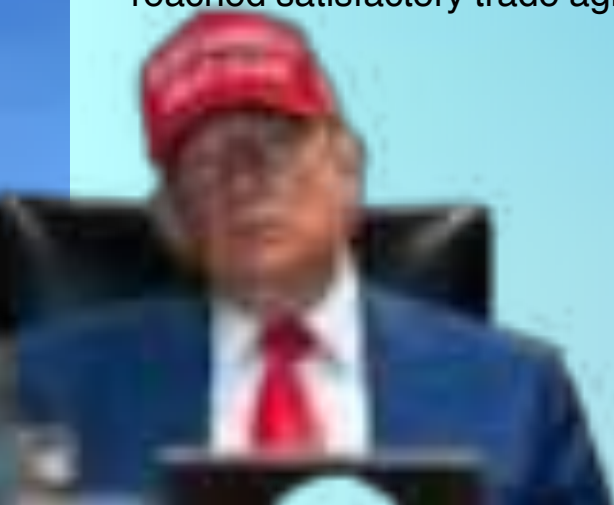
Reciprocal tariffs realigned: new rates signal rewards for cooperation, penalties for resistance



The Announcement on July 31, 2025



- President Trump has issued the further modifying reciprocal tariffs, to be **effective on August 7, 2025**, following months of negotiations and economic assessments.
- It confirms new or revised tariffs based on each country's treatment of U.S. exports, and lists exemptions or lower rates for countries that reached satisfactory trade agreements.



Countries	April 2	Latest Reciprocal Tariff
European Union	20%	0 - 15%
Mexico	10 - 25%	30%
Brazil	10%	50%
Canada	10 - 25%	35%
India	26%	50%
South Korea	25%	15%
Japan	24%	15%
Thailand	36%	19%
Vietnam	46%	20%
Indonesia	32%	19%
Malaysia	24%	19%

Transshipment Items

Product of any country determined by U.S. Customs and Border Protection to have been transshipped to evade applicable duties will be subject to **additional of 40% tariffs (over the applicable Harmonized Tariff)** plus (i) any other applicable fine or penalty and (ii) any other duties, fess, taxes or charges applicable to goods of the country of origin.

Thailand – Strategic Investment Destination



Strategic Location

- Strategic location
- Abundant industrial land



Attractive Investment Incentives & Policies

- Neutral political situation
- Attractive Investment incentives
- Fast and Convenient Process (one-stop service)
- Supportive government policy



Infrastructure Connectivity

- Integrated Transportation Infrastructure (deep-sea ports, highways, railways)

Competitive Skilled Workforce

- Relevant skill sets
- Competitive cost
- Technology capability



Established & Integrated Supply Chain

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



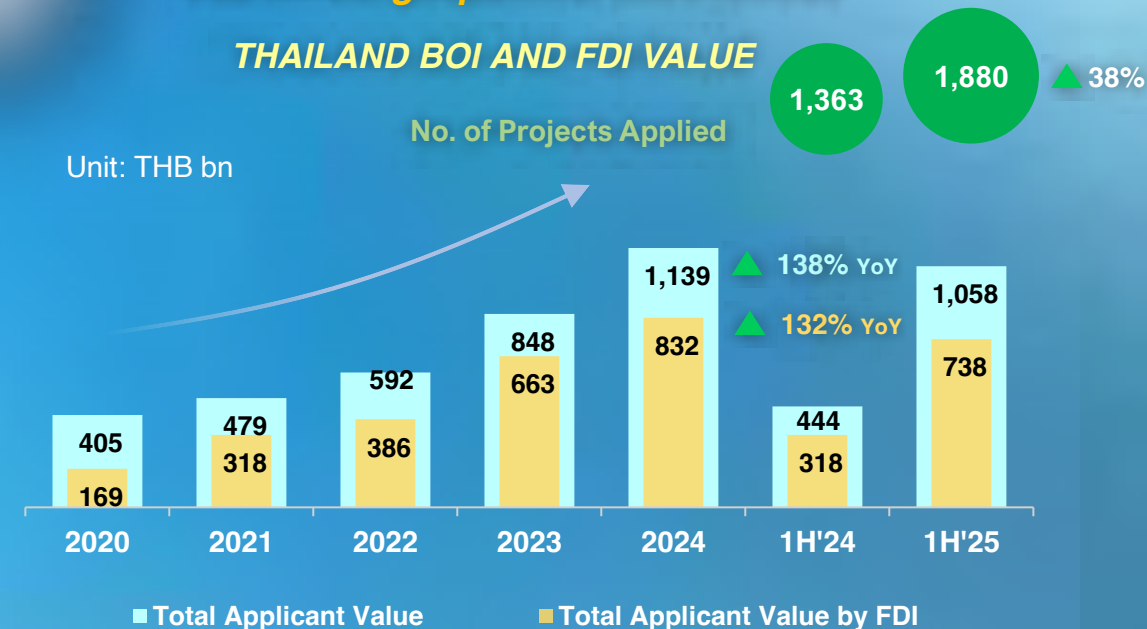
Reliable Utilities & Power including RE100

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

The Board of Investment (BOI) reports 2024 investment in Thailand exceeding THB 1.1 tn, the highest in more than 10 years, highlighting Thailand's crucial role as a regional hub amidst geopolitical uncertainties

THAILAND BOI AND FDI VALUE

Unit: THB bn



TOP SOURCE OF FDI APPLICATION 1H'25

		Application Value (THB bn)	% Share of FDI total FDI
	Singapore	245	33%
	Hong Kong	219	30%
	China	102	14%

WHA Customers Feedback

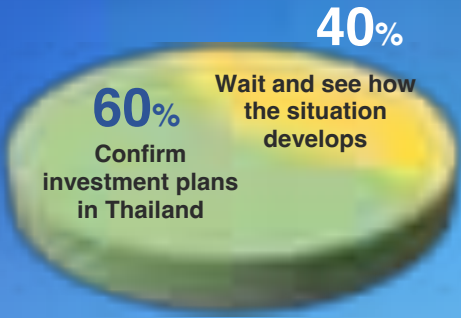


Manufacturing bases remain unmoved as manufacturers adopt “wait and see” approach amid trade tensions

Survey on 17th April 2025

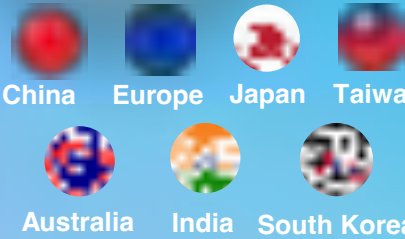
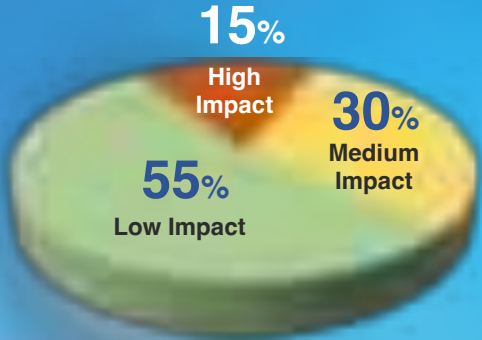
200 Manufacturers in Thailand & Vietnam

New / Target Customers
(60 Surveys)



Sectors: Data Center, Electronic Appliance, Consumer Products

Existing Customers
(140 Surveys)



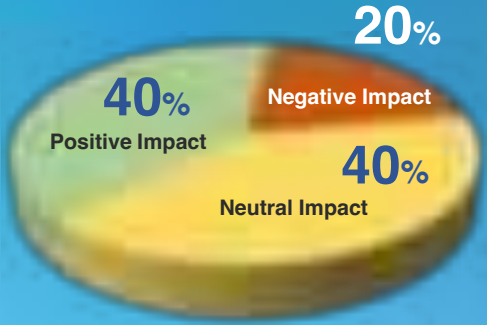
Sectors: Automotive, Machinery, Consumer Products, Electronics

Survey in July 2025

50 Companies in Thailand and China

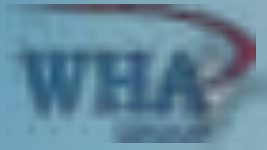
- ✓ No Plan to Move Out
- ✓ Still Confirm Investment

10 Companies in Vietnam



Sectors: Electronics, Optical Component, Packaging, Garment, Automotive

WHA Group's Strategic Directions



Extend LEADERSHIP

*Extend domestic leadership
and drive regional growth with
focus on Vietnam*



Embrace TECHNOLOGY

*Leveraging digital
technologies to build new
S-curve businesses*



Highlight GREEN Commitment

*Target to achieve net zero
mission of Green House Gas
by 2050*

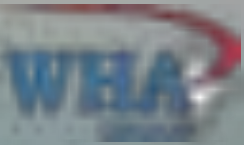


Power Up ORGANIZATION

*Digital transformation and
build high-performance
organization*

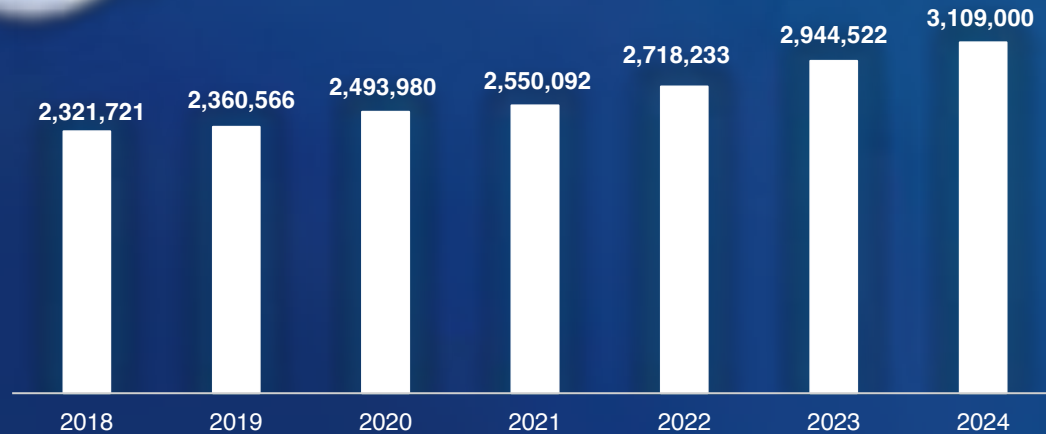


Sustained Performance in a Challenging Market



Assets under Owned and Managed

(Sqm)

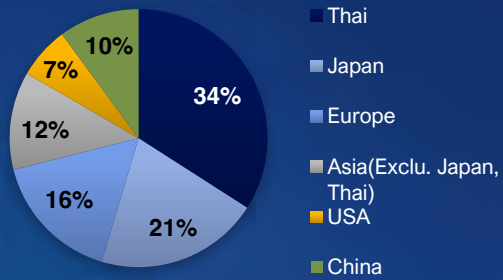


Land Sales in Thailand and Vietnam

■ Land Sales Value (THB mm) — Land Sales Area (Rai)

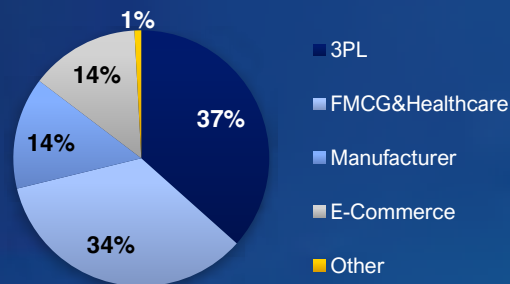


Customer by Nationality



Logistics Properties Business

Customer by Industry



% Customers by Nationality (BY RAI)

	Overall Portfolio	2023-Q2'2025
China	28%	66%
Japan	19%	2%
Thailand	17%	2%
USA	13%	16%
Europe	10%	1%

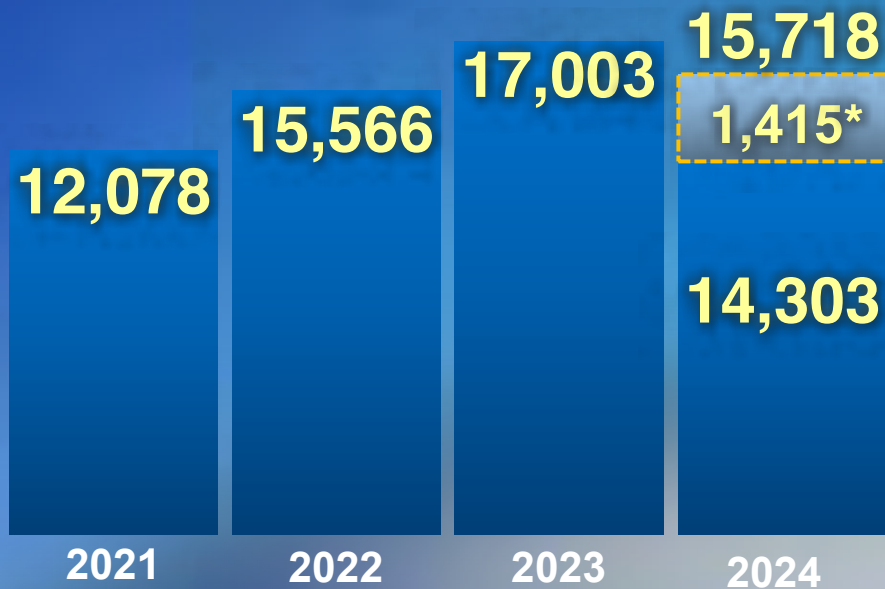
% Customer by Industry (BY RAI)

	Overall Portfolio	2023-Q2'2025
Automotive	40%	22%
Consumer Products	14%	29%
Electronics & Electrical Appliances	12%	22%
Digital & Technology	10%	16%
Steel/Metal	9%	2%

Delivering Record-Breaking Results

Achieved consecutive all-time high profits, supported by the continuing trend of production relocations

NORMALIZED REVENUE AND SHARE OF PROFITS (THB mm)



Remark *Net additional revenue if WHA IER performance were consolidated

NORMALIZED NET PROFIT (THB mm)

★ **3 Consecutive Years of All-Time High** ★



Total Asset 2024 **101,541**
THB mm

Net IBD/Equity 2024 **1.04**
Times

Credit Rating **Maintained A-**

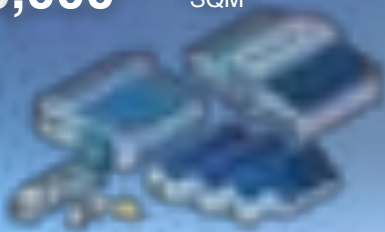
Maintain Ambitious 2025 Target



New Projects and Net Rent

200,000^{/1} SQM
(WHAID 80,000 SQM)

Asset Monetization
70,000 SQM



Mobilix

539^{*} Leased Vehicles^{/2}

53^{*} Chargers Installed



Total Land Sales **2,350** Rai



Utilities Sales & Management Volume

166^{*} Million M³

Secured PPA Equity MW
1,185 MW



Mobilix Platform

Official Launch
by early 4Q'25



Empower Group through Application Development Service

5 Projects

Remark : ^{/1} Including BTS, RBF and RBW ^{/2} Including both vehicles and chassis
^{*} Revised target

พอเพียง

Maintain sufficiency by avoiding over-investment, minimizing fixed costs, and refraining from taking on additional debt

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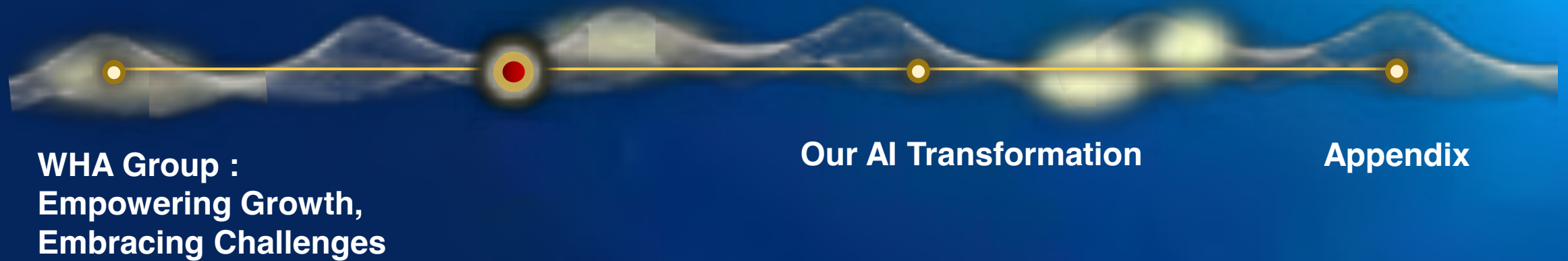
พึ่งพา

Build strategic alliances based on mutual economic interdependence and foster a self-sustaining economic ecosystem

พัวพัน

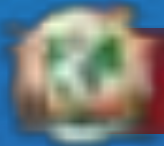
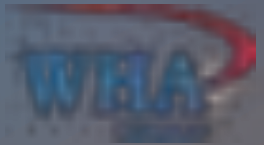
Expand self-sustaining economic ecosystem by integrating business partners across the supply chain to co-create a resilient, interconnected network built on shared growth

Responding to Climate Change



Global Climate Risks

World Economic Forum identifies environmental risks as top 3 global risks over the coming decade

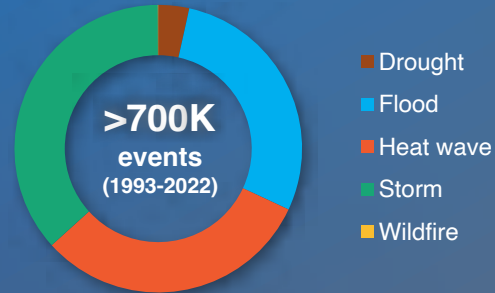


Extreme Weather Events

Lives, ecosystems, and economies harmed by floods, wildfires, and heatwaves

>US\$ 2 trillion Cumulative
Losses on Global Economy
for this ten-year period (2014 to 2023)

Storms cause the greatest economic losses, followed by floods



Natural Resource Shortages

Food and water insecurity from overuse, climate change, poor infrastructure and energy transition

8.2% of the global population experienced hunger (2024)

2.2 billion people live without access to safe drinking water (2024)



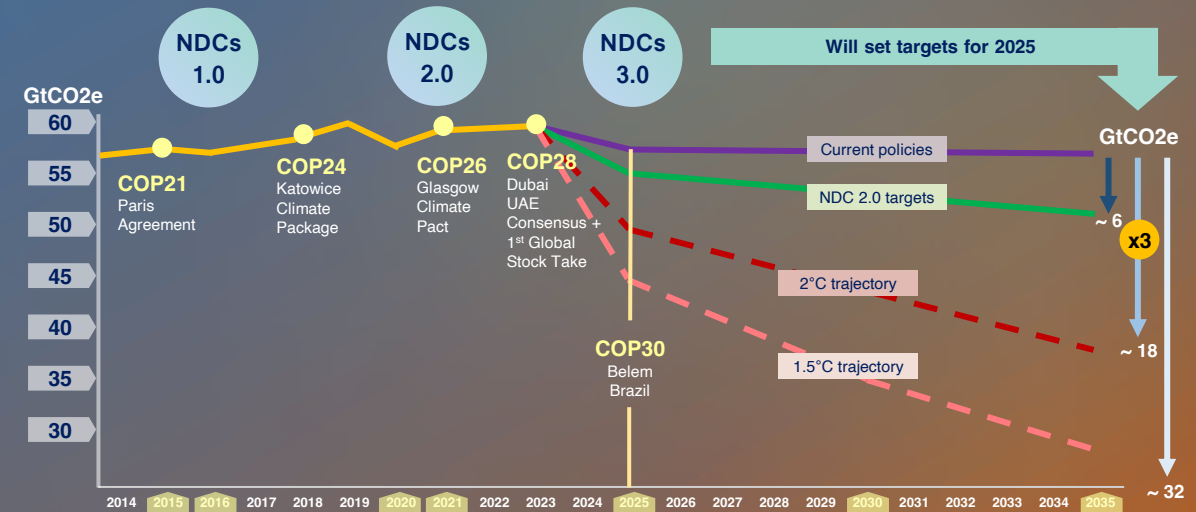
Biodiversity Loss and Ecosystem Collapse

Species extinction and ecosystem damage with major human & economic impacts

>1/2 of the world's GDP or \$44 trillion in value
—comes from industries that rely on nature

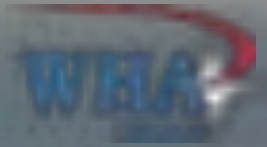
Ambition in NDCs 3.0 could be at least 3x higher than present, putting the world on track for 2°C

History and projections of NDCs and Global GHG emissions



Escalating Floods and Droughts Risk

Climate change is intensifying floods and droughts, disrupting water availability and driving future increases in water demand



El Niño & La Niña: More Frequent and Extreme



Source: National Oceanic and Atmospheric Administration, Climate

- **Increased rainfall and potential flooding in late 2024 and 2025**, particularly in northeastern Thailand.
- **Extended period of drought** and higher temperatures caused by El Niño.
- **Increased rainfall** and potential flooding risks caused by La Niña.

Surging Water Demand in EEC



Source: Office of the National Water Resources

Estimate water usage demand over the next 20 years in ECC Area (2017-2037)

- **52% water demand increased in Rayong Province**, mainly from industrial.
- **50% water demand increased in Chonburi Province**, primarily from domestic consumption. population growth—from 4 million to 6 million people.

Thailand Water-Stressed Areas



- The image shows a standard tool used to analyze Water-Stressed Areas using Water Tools (Aqueduct).
- WHA industrial estates facing the extreme 8% High Water Stress, 92% High Water Stress as of 2024.

Escalating Flooding



Source: Thai Meteorological Department

The accumulated rainfall amount is mainly higher than normal in the central region, and partially in the northern and northeastern regions.
**Normal value is the average rainfall amount within the period of the last 30 years*

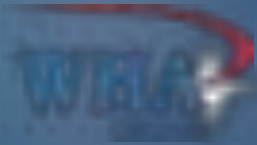
Racing Water Demand From AI and Data Centers Sector



- The data centers that power artificial intelligence consume immense amounts of water to cool hot servers.
- **100 MW data center uses approximately 4,164 m³/day of water use.**

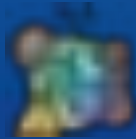
Climate Compliance is not the Expense, but Non-compliance is

In the new economy, climate policy is outpacing the climate itself: regulatory readiness is the new competitive advantage



NDC 3.0

- Thailand is set to significantly raise its greenhouse gas reduction targets.
- Domestic policies will inevitably become stricter to align with these new targets.



Climate Change Act

- The first legislation granting the government full authority to implement mandatory climate measures.
- It lays the foundation for financial instruments like the upcoming Carbon Tax and Emissions Trading Scheme (ETS).



Carbon Tax

- A direct tax levied on the volume of greenhouse gas emissions.
- Under government consideration for implementation, starting with the energy and industrial sectors.
- An immediate increase in domestic operational costs.

Impact on Thai Businesses

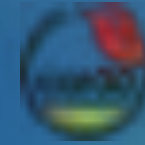
Competitive Disadvantage

Surging Costs

Market Access Risk

Supply Chain Disruption

New Investment Required



United Nations Climate Change Conference (COP30)

- A critical summit where nations must submit new, more ambitious climate targets.
- The pressure from COP30 is the direct catalyst for Thailand's more aggressive NDC 3.0, accelerating the timeline for stricter domestic regulations.



EU Deforestation Regulation (EUDR)

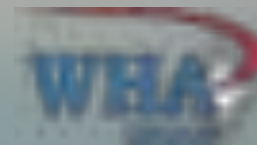
- A law requiring agricultural products (e.g., rubber, palm oil, wood, coffee) to be proven free from deforestation-linked land.
- Disrupts the entire supply chain. A failure in traceability means a complete ban on exports to the EU.



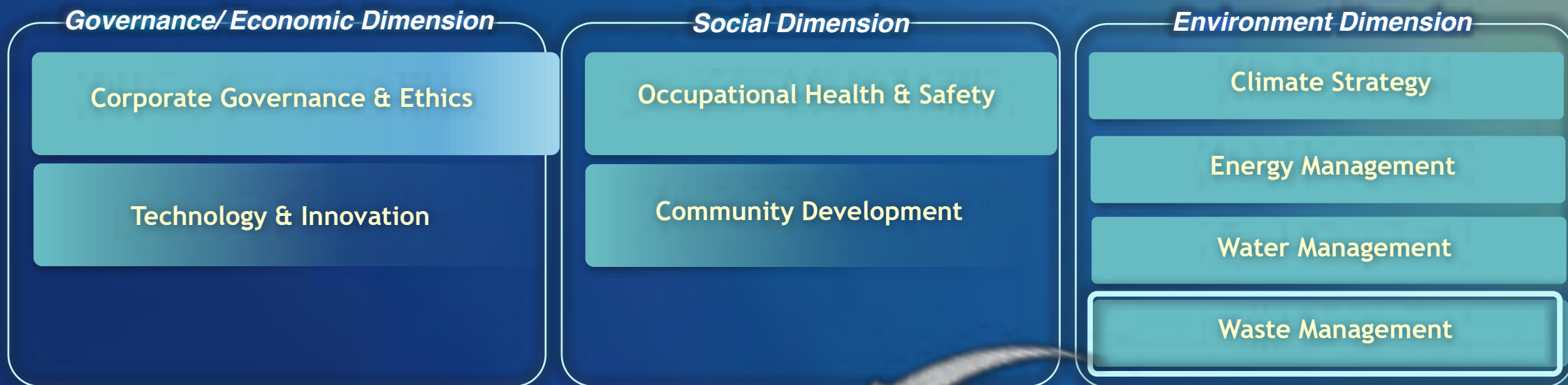
Carbon Border Adjustment Mechanism (CBAM)

- A tax on carbon-intensive goods imported into the EU (e.g., steel, aluminum, cement, fertilizers).
- A massive increase in export costs and the potential loss of competitiveness in the European market.

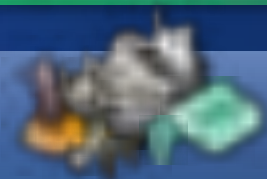
2024 Materiality Topics



Materiality Topics Year 2024

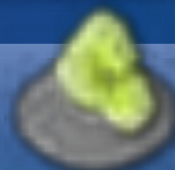


Waste Management : From Responsibility to Opportunity



Beyond Operations to Value Chain Impact

Focus on our value chain's total impact, influencing our entire ecosystem beyond our own minimal operational waste.



Empowering Circular Economy Practices

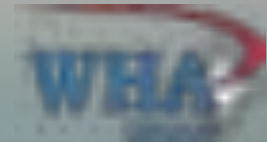
Integrating a circular approach throughout all operational processes to reduce the use of natural resources.



Turn Challenge into Value Creation

Transform waste management from a challenge into a strategic new business opportunity, driving sustainable growth.

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



WHA Mission

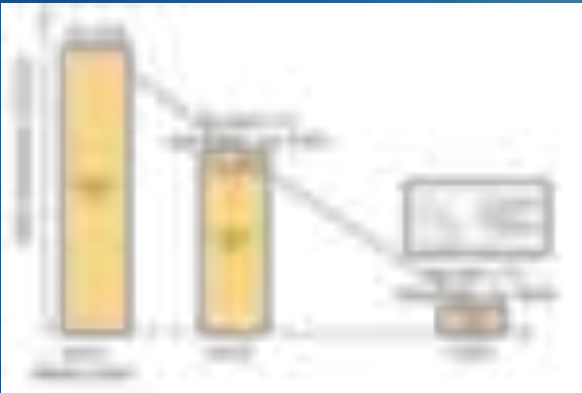
2050

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 from base year 2021.

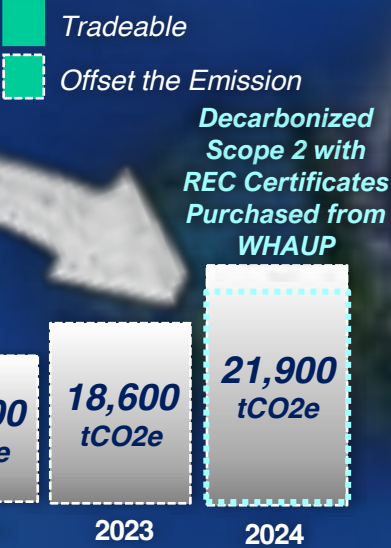
Reduce absolute emission scope 1 and 2 by 42% by 2030 and 90% by 2050



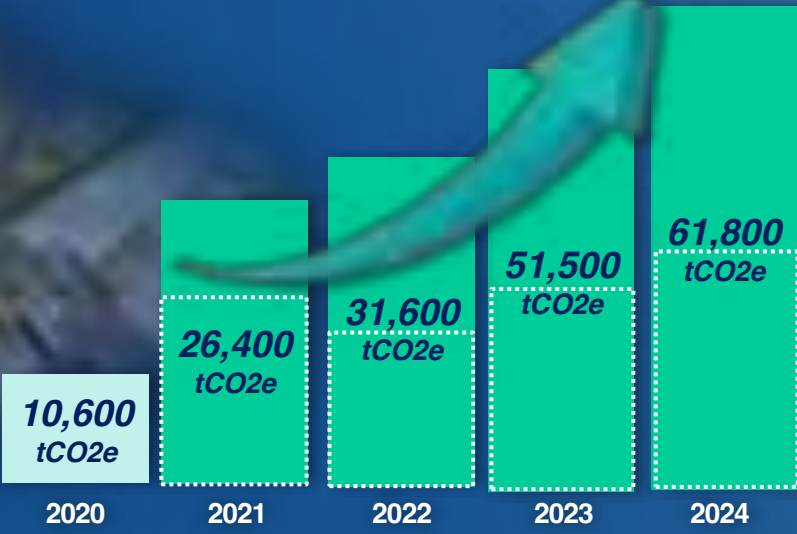
Reduce intensity emission of investment in power generation by 74% per kWh in 2030 and 90% by 2050



WHA achieved carbon neutrality since 2021



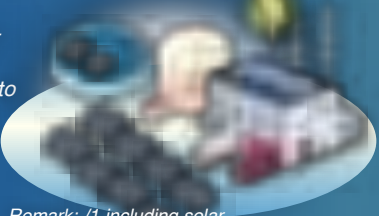
CARBON NEUTRALITY



2Q/25 Clean Energy

463^{/1}
Secured PPA Equity MW from Renewable Energy

All-in solar rooftop packages to industrial customers



Remark: /1 including solar 441 MW, hydro 19 MW, and waste to energy 3 MMW

WHA GHG Emission (Scope 1&2)

WHA GHG Emission Offset from Grid Electricity Consumption per year

Our Commitments Pathways

Our ambitious commitments aiming to accelerate the transition while create sustainable growth to all stakeholders

2030

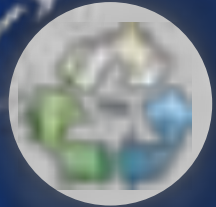
2050



NET ZERO COMMITMENTS

42% Emission Reduction
*Scope 1 and 2 from Base
Year 2021 per SBTi*

Net Zero
for Scope 1, 2 and 3



CIRCULARITY COMMITMENTS

50% Green Procurement

100% Circularity



NATURE COMMITMENTS

70% Recirculated
Wastewater

100% Recirculated
Wastewater

No Biodiversity Net Loss
within Manageable Boundaries*

**Biodiversity Net Positive
Impact**

Our Climate Strategy

We introduced our climate strategy to proactively respond to the impacts of climate change



Turning Green into Growth

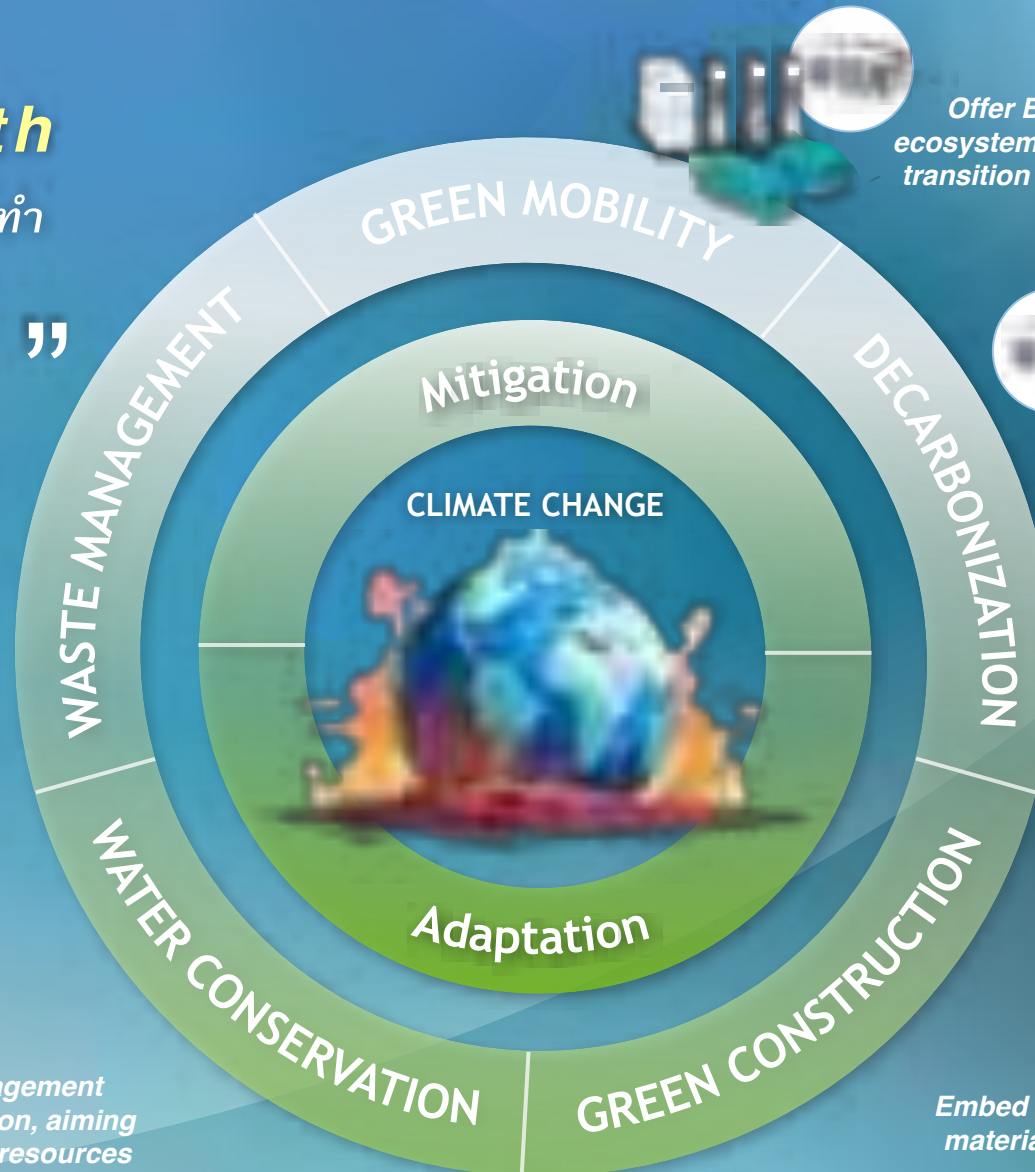
“ GREEN ต้องกินได้ GREEN แล้วกินไม่ได้ ไม่มีใครทำ เพราะธุรกิจอยู่รอดได้ต้องทั้งรักษโลกและสร้างรายได้ไปพร้อมกัน ใครปรับตัวได้ก่อน คือ ผู้นำในโลกใบใหม่ ที่กฎเกณฑ์เปลี่ยนทุกวัน ”



Adopt 3R approach to reduce waste and aiming for zero waste to landfill



Focus on sustainable water management practices, including water reclamation, aiming to reduce reliance on natural water resources



Offer Built-to-suit green mobility ecosystem to accelerate the sustainable transition of Thailand's logistics sector



Apply energy saving solutions and increase the usage of renewable energy and EV in our operation



Embed carbon reduction construction materials in the project development



Turning Green into Growth

Generating nearly 1 billion baht in 2024, projected to reach 1.5 billion baht in 2025 — with Continuous Rise



Mobilix

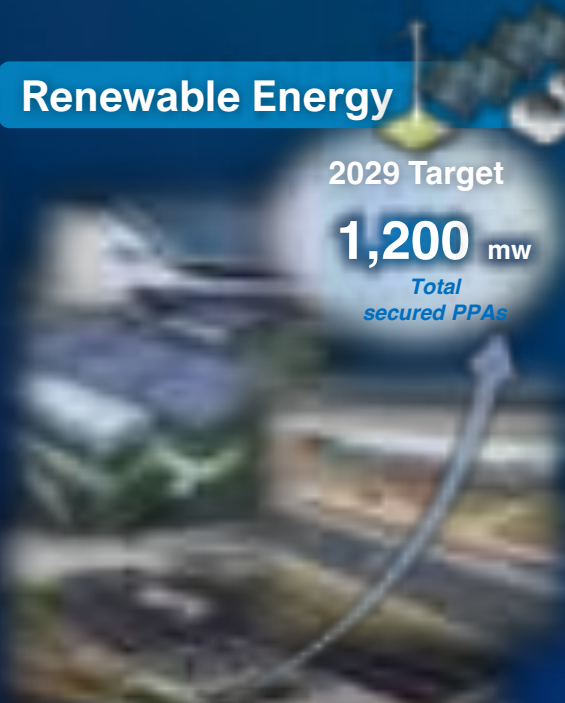


2029 Target
20,000
New leased vehicles

2024

330 **132**
leased vehicle million baht

Renewable Energy



2029 Target
1,200 mw
Total secured PPAs

2024

437 mw **493**
Total secured PPAs million baht

Reclamation Water

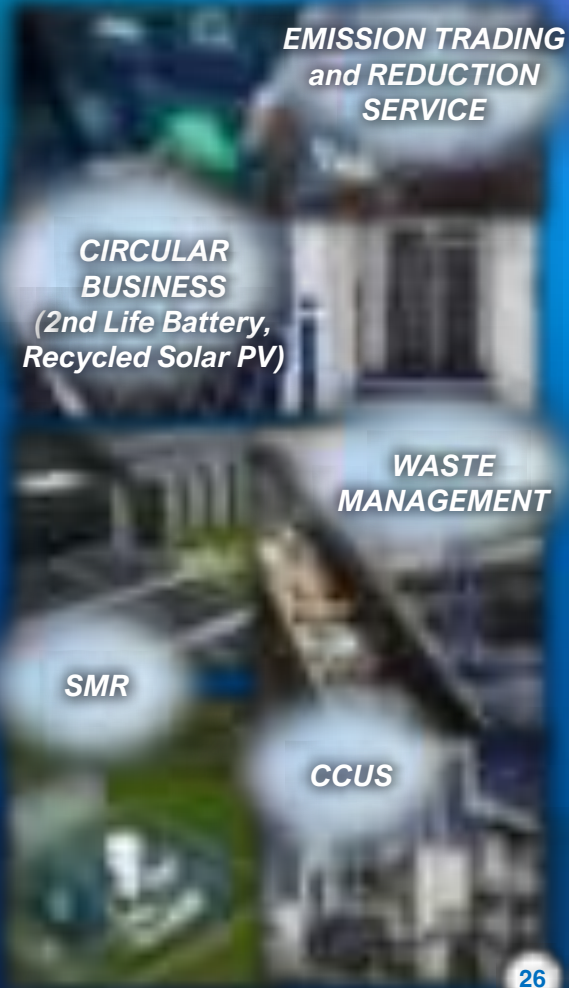


2029 Target
24.25
Million m3 Water sales & managed volume

2024

7.6 **303**
Million m3 Water sales & managed volume million baht

Future Sustainable Business



Nature Preservation Achievements (based on 2024 Performance)



Sustainable Business Investment Plan



48,000

Million baht

40% of Total 5Y CAPEX

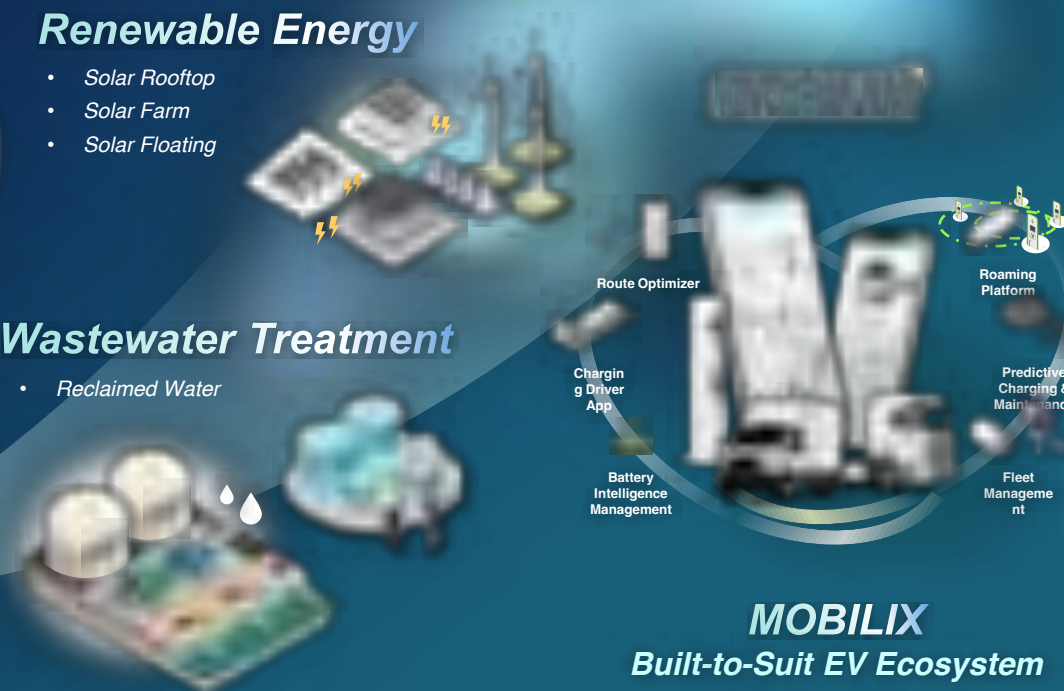
5Y CAPEX (2025 - 2029)

Renewable Energy

- Solar Rooftop
- Solar Farm
- Solar Floating

Wastewater Treatment

- Reclaimed Water



MOBILIX

Built-to-Suit EV Ecosystem

“

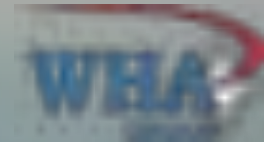
ความยั่งยืน ไม่ใช่ต้นทุน
แต่คือ การลงทุน

และอนาคตจะให้ผลตอบแทนกลับมา
ทั้งต้นทุนการดำเนินงานที่ลดลง
รวมทั้งโอกาสและรายได้ที่เพิ่มขึ้น
จากโมเดลธุรกิจใหม่
เพราะสุดท้ายแล้วการทำธุรกิจ
ต้องสามารถสร้างกำไรได้

”

The Ambition Forster Even Stronger Growth

Our strong growth in sustainable business transforms into larger impact of nature preservation



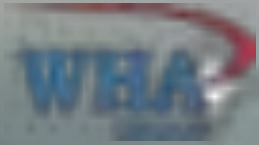
2029 Target

	Mobilix	Renewable Energy	Reclamation Water
2029 Target	 20,000 EVs <i>No. of Accumulated Rented EV</i>	 1,200 mw <i>Total Secured PPAs</i>	 24.25 <i>Million m3 Water Sales & Managed Volume</i>
Revenue	 11,000 <i>million baht per year</i>	 5,600 <i>million baht per year</i>	 720 <i>million baht per year</i>
Saving to Customer	 37,000 million baht <i>of Accumulated CAPEX Savings for Fleet Operators and Reduced Operational Costs through 2029¹</i>	 1,860 million baht of electricity cost per year	 1,840 million baht of Total CAPEX Savings for Reclamation Water Plant Investment
Nature Preservation	 280,000 tCO2 per year	 683,000 tCO2 per year	 25 Million m3 of Natural Water Equivalent to Water Consumption of 685,000 people

Remark 1/ Calculate the cumulative numbers from the start of the business until the 2029 target year, which is the end of the year 2023-2029

Green Mobility : MOBILIX Ecosystem

Sustainability in Action Enabling Green Mobility Through an Integrated Ecosystem



MOBILIX



EV Fleet Provision & Maintenance

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



Renewable Energy Solution Provider/ Private PPA

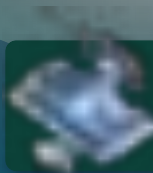
- Solar Rooftop
- Small Power Producers (SPP)
- Peer-to-Peer Energy Trading



E Roaming/ Charging Aggregator

MOBILIX Software Solution

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



EV Control Tower Solutions



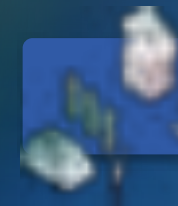
Charging Business

- EV Public Charging Station
- EV Charger on Premise



Charging Ancillary Infrastructure

- Charger
- Battery Storage
- Energy Storage System

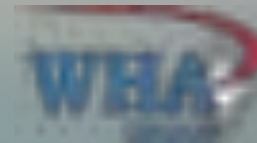


Charge Point Operating Service



Mobility As A Service

Green Mobility : “Current Situation of Thailand’s Logistics” VS “Market Opportunity”



Global Logistic Cost to GDP* (%)

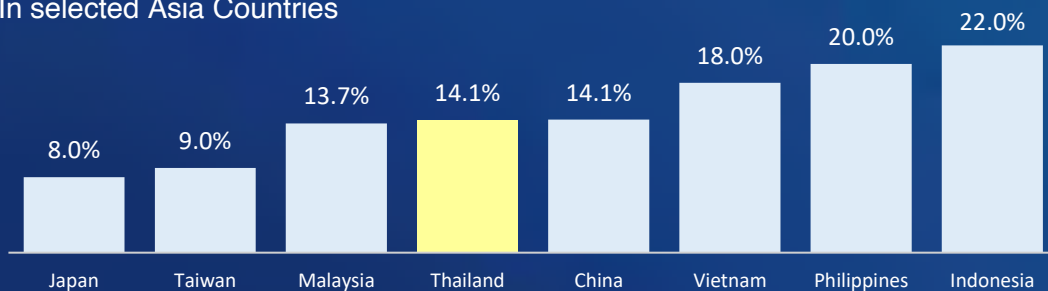
World Average
10%

North America
9%

Europe
11%

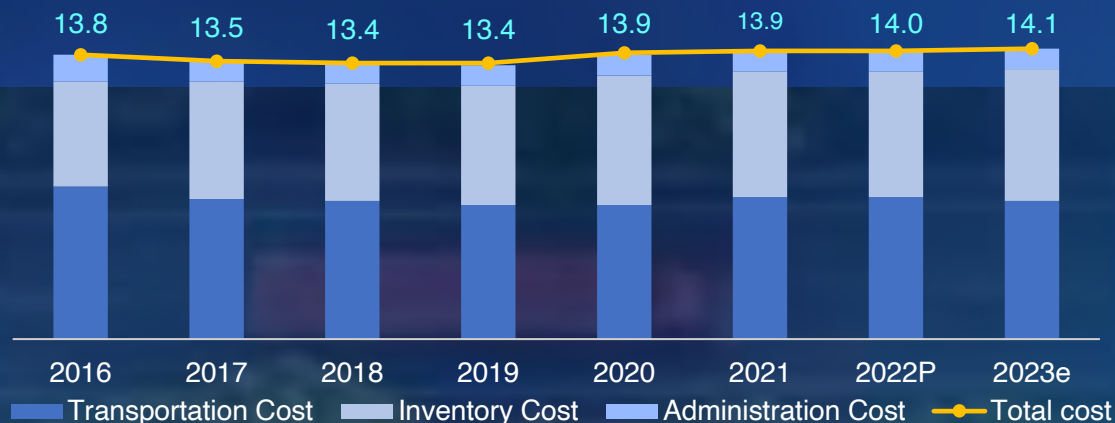
Asia Pacific
13%

In selected Asia Countries



Note 2022-2023 data from Thailand's Logistics Report 2022, LPI Global Ranking, NEXDIGM, Armstrong & Associates (2023)

Thailand Historical Logistics Cost to GDP (%)

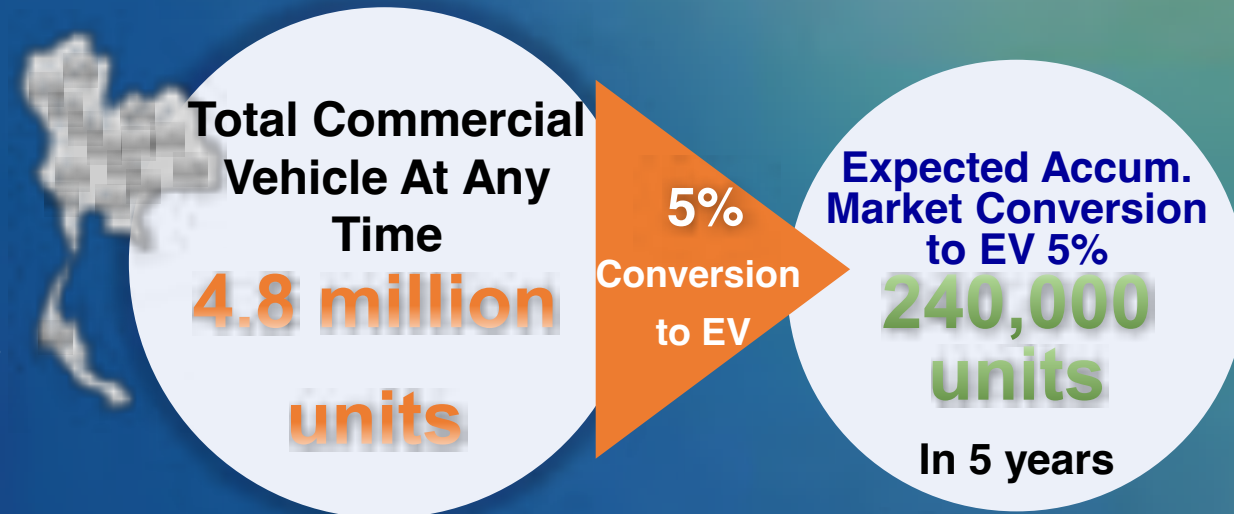


(P: Preliminary / E: Estimate)

Sources: Thailand's Logistics Report 2022, LPI Global Ranking 2023 (World bank)

Thailand's Commercial Vehicle Sector – Market Opportunity for Logistics Transformation

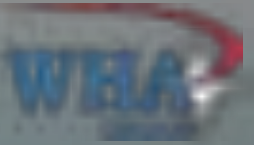
Market Conversion to EV



Blue-Chip End Users



Green Mobility : Driving Real Change for a Greener and Fairer Future of Thailand's Logistics



Successfully **secured 360**
new vehicle leases as of 1Q'2025

Installed **5** Locations of
EV Charging Station
with an accumulated electricity
power over **5.5 MWh**



280 EVs
Handed-Over Fleet



2,800 Ton Co2e/ Year
GHG emission reduction

2024

5 Year Target

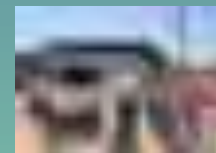
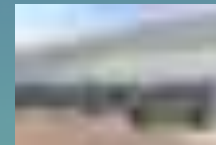
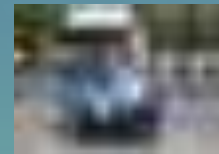
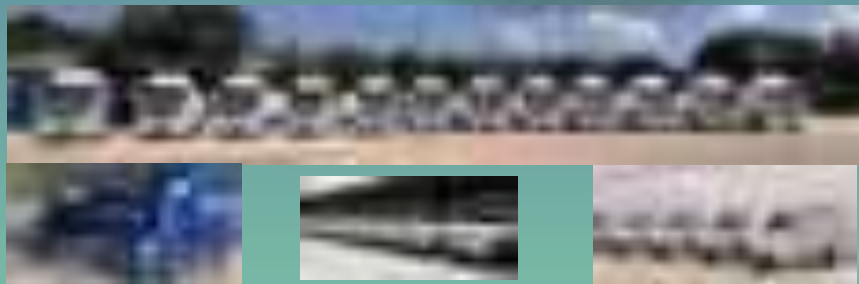


20,000 EVs

280,000
Ton Co2e/ Year



Generated Revenue from Mobilix
Ecosystem of **THB 132 mn** in 2024



**Enhancing
Accessibility**

Delivered Substantial
CAPEX Savings of over

THB 600 mn
for Fleet Operators

Green Mobility : Driving Green, Driving Circular

Driving Sustainable Transport, Smarter Energy, Cleaner Future



Green Transport



ZERO Direct Pollution

- *Zero GHG Direct Emission from 2,800 Ton Co2e/ Year to 280,000 Ton Co2e/ Year**
- *Zero Noise Pollution*
- *Zero NOX Emission*
- *Zero PM2.5*

Second-Life Battery



Enhance Second-Life Battery Industry

- *Repurposing EV Battery to BESS*
- *Recycling Battery*
- *Reduce E- Waste*
- *Enhance Renewable Energy & Grid Stability*

Circular Economy



Smart Rental Model

- *Avoid New Vehicle Purchases for Users*
- *Maximize Asset Utilization*
- *Reduce End-of-Life Waste*

Decarbonization Solutions : Solar on Our Operations

Expansion of Renewable Energy Consumption Capacity for WHA's Operations



2024

Installed Capacity

1.2 MW

Cost Saving
3.9 mn THB / Year

2025 Target

Installed Capacity

1.6 MW

Cost Saving
6.2 mn THB / Year

Solar Rooftop, Floating Solar and Solar Farm for Water Treatment Facilities

WHA EIE



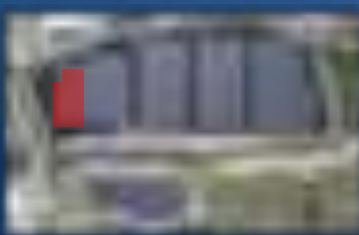
ESIE



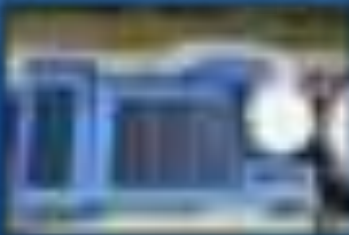
WHA ESIE1



Floating Solar at ESIE (RO)



WHA ESIE1



WHA ESIE4



WHA RY36



Battery Energy Storage System (BESS) at ESIE



Solar Farm at WHA ESIE1



Wetland

Solar Installation in Other Facilities

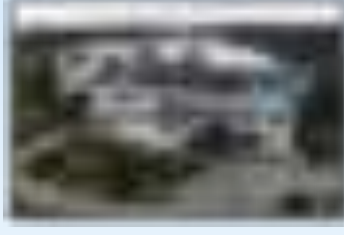
ESIE Plaza 1



ESIE Plaza 2



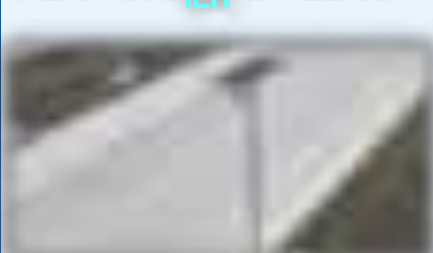
ESIE Office



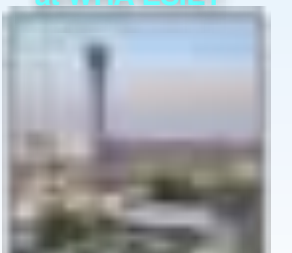
WHA ESIE4 Office



Solar LED Street Lighting at IER



Solar Telecom Tower at WHA ESIE1



Decarbonization Solutions : Solar Portfolio Expansion

Enabling Our Customers with Clean Energy

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.



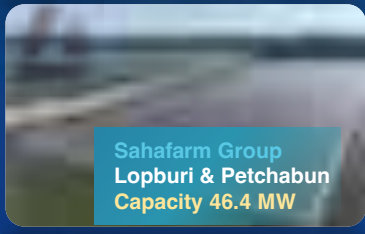
Vaneda Food
Chachengsao
Capacity 3.0 MW



A&P AGRI
Chachengsao
Capacity 0.7 MW



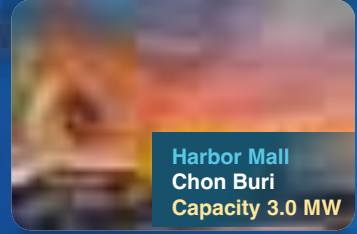
A&SFT
Chachengsao
Capacity 0.5 MW



Sahafarm Group
Lopburi & Petchabun
Capacity 46.4 MW



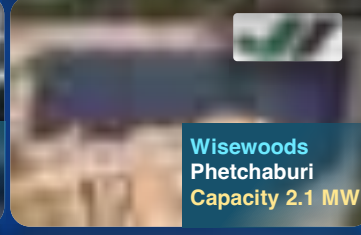
KIRIU (Thailand)
WHA ESIE1, Rayong
Capacity 12.3 MW



Harbor Mall
Chon Buri
Capacity 3.0 MW



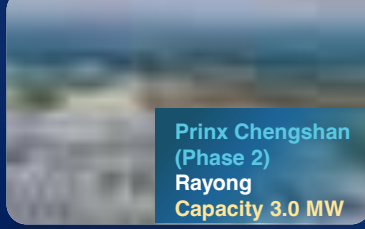
Quality Minerals
Lopburi
Capacity 3.0 MW



Wisewoods
Phetchaburi
Capacity 2.1 MW



AutoAlliance
(Thailand)
Rayong
Capacity 8.0 MW



Prinx Chengshan
(Phase 2)
Rayong
Capacity 3.0 MW



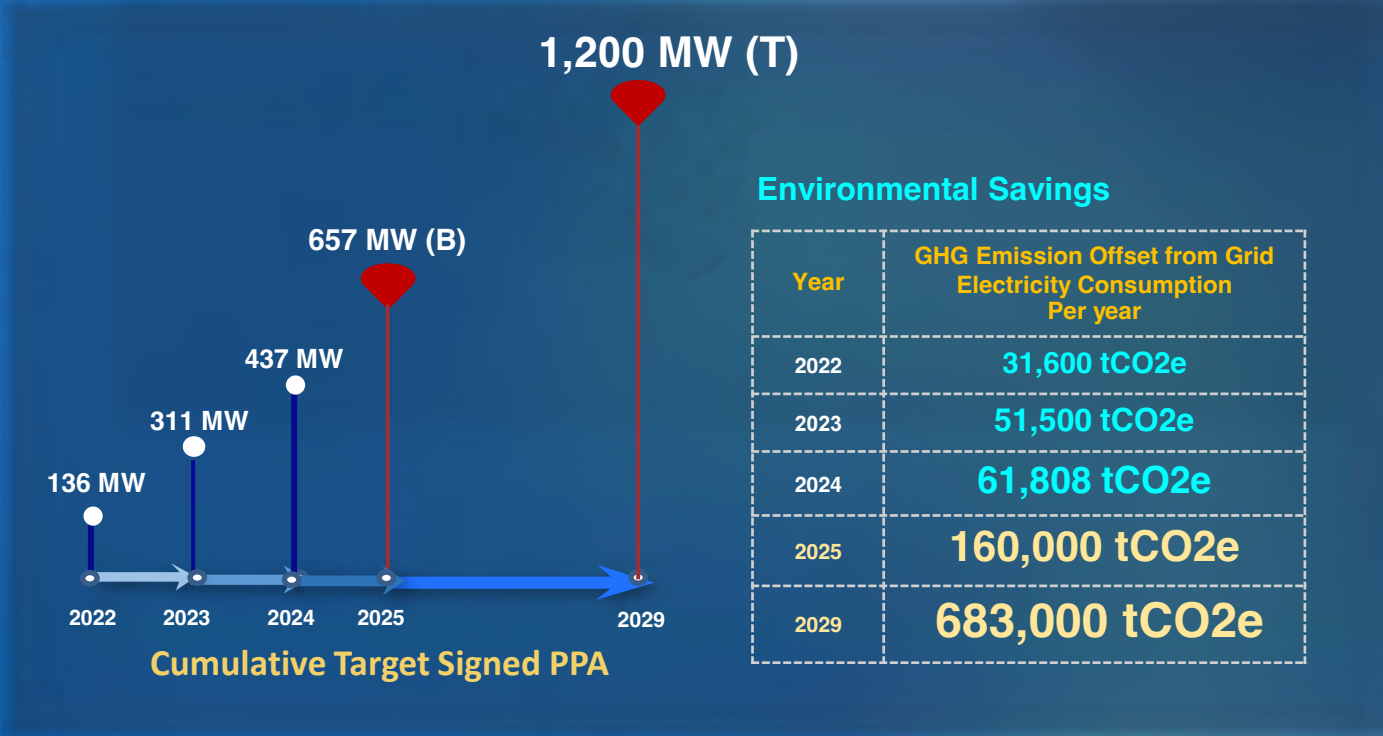
APM Agro
Ratchaburi
Capacity 4.4 MW



SPM Group
Bangkok
Capacity 4.6 MW

Commit to a long-term goal of delivering renewable energy

with a cumulative target of signing power purchase agreements for 657 MW by 2025 and 1,200 MW by 2029, contributing to CO2e GHG emissions



With 1,200 MW PPAs of renewable energy fully operated there will be;



Revenue generation of **5,600** MB per year



Customer savings on electricity costs of **1,860** MB per year

Decarbonization Solutions : Energy Management

Reduce Energy Intensity, Enhance Energy Efficiency and Leverage our Expertise to Expand Energy Saving Solutions to our Customers



Energy Conservation Initiatives

LED Lighting at Warehouses



LED Lighting for Signage and Streetlights



Automatic Lighting System



Replacement of Old Equipment with Higher Efficiency (Water supply pump)



Optimize RO Motor Performance with Technology - VSD



Energy Conservation Practices



Facility Management Services and Energy Savings Solutions

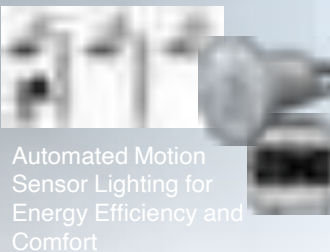
Preventive Maintenance Package



AI Chiller and Energy Saving Services



SMART LED Solutions



Decarbonization Solutions : Green Mobility and Technology

Adoption of Green Mobility and Technology in WHA Operations to Reduce Carbon Emission

Transforming from ICE to EV



2025 Target

EV Fleet
(Operation and Office)

43 Vehicles

EV Adoption
(% of Total Internal Fleet)

33%

Understudy

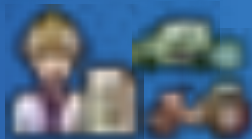
Electric Water Truck



Electric Excavator



Expand EV adoption to
Supplier/Contractor



Reduction of Car Fuel Consumption

Smart Traffic Management



Unified Operations Center (UOC)



Drone Technology



Decarbonization Solutions : Forestation

Continuous driving Forestation Activities in Collaboration with Surrounding Stakeholders

Total area

50,000 rais

Green area

5,400 rais

10.8%

of green area to
total estate area

Let's Zero Together

In collaboration with Industrial Estate Authority of Thailand to increase green areas, enhance carbon dioxide absorption rates, and promote biodiversity in the area



Planting In 2024

>16,000
Trees

8
Rais

August 2024



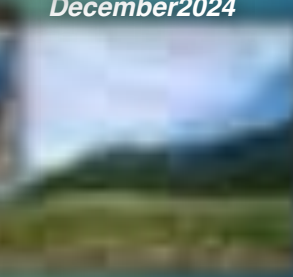
1,200 trees were planted
on a 3-rai area at Khao
Nok Takrum Monastery



December 2024



15,165 trees were planted on a 5-rai
area at WHAESIE2 on the green area
adjacent to the Khao Khiao-Khao
Chomphu Wildlife Sanctuary



Collaboration with Mae Fah Luang : **>200** Rais

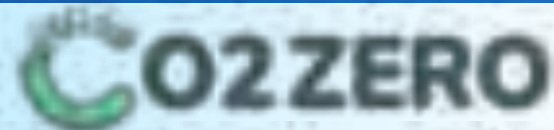
Embracing the principles of biodiversity and regenerative agriculture by developing green areas, starting with 3 industrial estates—ESIE2, ESIE3, and WHA RY36—and will gradually expand to others, with the ultimate goal of transforming them into Other Effective Conservation Measures (OECMs)



Total Green Area of
15 WHA Industrial Estates
In Thailand

Decarbonization Solutions : CO2 ZERO

We are Decarbonization Enabler, developing tools for our stakeholders to know their Carbon Emission Baseline as an important starting point on their Net Zero Pathways



Corporate Carbon Accounting Platform

HIGHLIGHT FEATURES

- ✓ **Real-Time Monitoring & Analytics**
Visualize your organization's carbon emissions data with an interactive dashboard that provides real-time insights for better decision-making.
- ✓ **Automated Emission Calculations**
Automatically calculate greenhouse gas emissions with support for customizable emission factors to match your specific operations.
- ✓ **Enterprise-Level Structure Management**
Manage data across all organizational levels-corporate, subsidiaries, and site locations. Customize activity categories and set your own emission factors.
- ✓ **Verified Reporting**
Generate standardized reports ready for third-party verification and certification.
- ✓ **Seamless Data Integration**
Support automated carbon footprint data import for enhanced accuracy and efficiency.



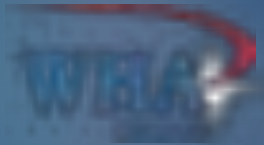
Enabling our stakeholders with exclusive carbon management tools to simplify carbon accounting and drive effective action

- Full access to CO2 ZERO with no-cost
- Centralize all emissions data in one secure, easy-to-use platform
- Automate calculations to save time and reduce errors
- Identify carbon "hotspots" in operations to find key areas for business opportunity and cost savings



Green Construction

Aiming to reduce embodied and operational carbon throughout the entire process, from design and material selection to construction



WHA LOGISTICS' PROJECTS

Our Green Construction Principles

Prioritize Low-carbon and Recycled Materials

and locally sourced options to reduce the use of raw and manufactured materials

Focus waste treatment

on reuse, repair, remanufacturing, and recovery over landfill/incineration

Design for Flexibility, Durability, and Efficiency

Use adaptable layouts and durable materials to extend building life and reduce energy and water usage

LEED STANDARD



WHA Mega Logistics Center Theparak KM.21 Building B received LEED v4.1 BD+C

Total floor area of **27,212 m²**

Energy

Efficient design with insulation, smart systems & solar panels
Reduce 140,000 kg of GHG emission per year



Water

Water-efficient fixtures reduce indoor use by over 50%
Saving 358,000 liters per year



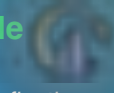
Air Quality

Better ventilation, filtration, and low-emission materials support healthier indoor spaces



Sustainable Site

Shading and reflective materials reduce heat, while smart lighting minimizes light pollution



Materials

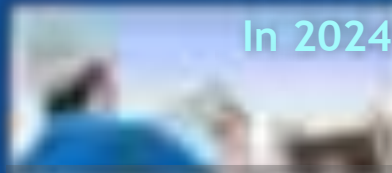
Recycling systems and recycled materials promote a circular economy



PRECAST

Offer a cost-effective construction alternative by reducing

- ✓ Reducing on-site construction time
- ✓ Minimizing waste generated during the building process



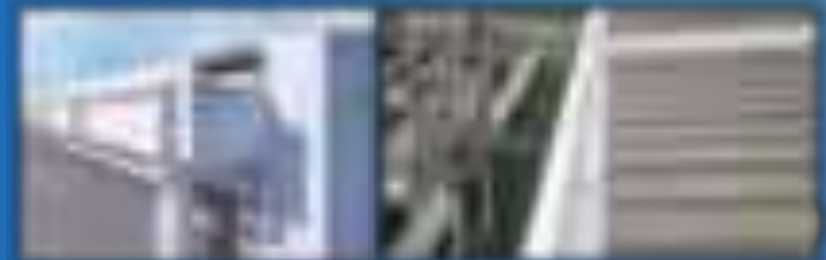
In 2024

In 2024, WHA Group used precast across **135,570 m² of construction**, reducing waste by **208 tons** (2% less than traditional methods)

Construction over **135,570 m²**

UPVC ROOF GUTTER

- ✓ Lower-carbon material compared to traditional material
- ✓ Durable lifespan and requires minimal maintenance



Green Construction

Aiming to reduce embodied and operational carbon throughout the entire process, from design and material selection to construction



WHA INDUSTRIAL ESTATES' PROJECTS

Hydraulic Cement

CO2 emission per a ton of production

Cement	VS	Hydraulic
1 tons of CO ₂		0.7 ton of CO ₂



100%
completed

WHA IER ph. 2
ESIE3 ph.3(3.1)
RY36 ph.2

To be developed at
WHAESIE2.1
WHAESIE4 Ph.3
WHAESIE5

GFRP

(Glass-Fiber Reinforced Polymer) replacing steel work

CO2 emission per a ton of production

Steel	VS	GFRP
1.8 tons of CO ₂		0.18 ton of CO ₂



Water Conservation : Clean Water for Planet

We embrace a sustainable water management concept that spans the entire lifecycle—from sourcing, production, operations, wastewater treatment to end-of-life management

1 Alternative Raw Water Sources

- ✓ Third Party Supplier
- ✓ On-site reservoirs as natural water reserve

2 Water Production

Offer wide range of water from standard options to value-added solutions

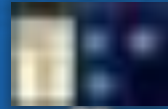
- ✓ Industrial Water
- ✓ Value added water (Clarified, RO, Demineralized)
- ✓ Reclaimed Water

Incorporate circular concept in water production

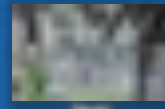
- ✓ Integrating solar energy and micro turbine to the production
- ✓ Incorporate green construction material & minimize waste

3 Smart Operations & Maintenances

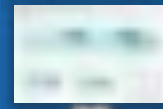
Use data and AI to optimize operations and improve efficiency



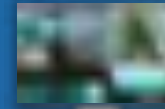
SCADA & UOC



GIS/Hydraulic Map



RO Performance Forecasting



Smart Natural Water Management

4 Wastewater Treatment

- ✓ Wastewater Collection
- ✓ Wastewater Treatment

5 End-of-life Management



Recycle cartridges into construction materials and are currently studying the potential for second-life applications of RO membranes



Reuse sand media from water treatment plants

Reuse treated wastewater for cleaning and landscaping as construction material

Water Conservation : Reclaimed Water

Implementing a Sustainable Water Reclamation Strategy Using Circular Economy Principles

Water Reclamation

Convert wastewater into an alternative value-added water products (e.g. Demineralized water, RO water)



- **Reduce water discharge** to environment
- **Reduce water extraction** from natural sources
- **Reduce conflicts** between the community and industry on the allocation of water resources
- **Reduce government budget** in the development of water storage and delivery
- **Offer comprehensive utility service** with a wide range of products

2023 Outcome

Reduce the usage of
water from nature

7,461,450

m³ / Year

Save cost on raw water by
THB 86 Million / Year

Equivalent to water
usage of

204,000

People

2024 Outcome

Reduce the usage of
water from nature

7,849,316

m³ / Year

Save cost on raw water by
THB 91 Million / Year

Equivalent to water
usage of

215,000

People

2029 Target

Reduce the usage of
water from nature

25,000,000

m³ / Year

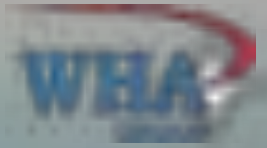
Save cost on raw water by
THB 290 Million / Year

Equivalent to water
usage of

685,000

People

Water Conservation : Floods and Droughts Mitigation and Adaptation



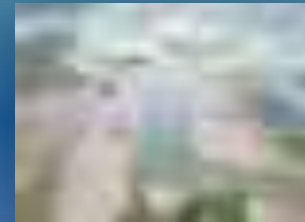
Planning a Proactive Strategy for Climate Resilience

Strategic Location Selection



- **Selected areas with low risk of natural disasters** or no reported history of disasters for project development.
- **Majority of WHA Group's projects are located** in Bangna-Trad or Eastern Economic Corridor (EEC) region, which has a **low risk of natural disasters**.

Extreme Weather Resilient Design

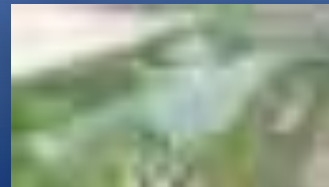


- **Upgrade water infrastructure** such as water drainage, retention pond and building structure to be storm and earthquake resistance.
- **Design and build flood prevention systems** tailored to each project, including reservoirs, retention ponds, and drainage pits, while ensuring natural watercourses and nearby communities are not affected.

Continuous Expansion of Water Reservoirs and Storage Ponds



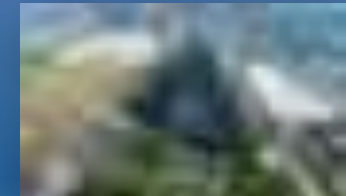
- ▶ **On-site and off-site water storage** ensures a reliable reserve supply.
- ▶ **Mitigates water shortage risks** and ensures operational continuity for our customers.
- ▶ **Reduces dependence on external sources** for greater self-sufficiency.



- **Reservoir near WHA Rayong 36 Industrial Estate**
132,985 m³ of water storage capacity.



- **Reservoir in WHA SIL Industrial Estate**
800,271 m³ of water storage capacity.



- **Reservoir in ESIE Industrial Estate**
530,000 m³ of water storage capacity.

Water Conservation : Floods and Droughts Mitigation and Adaptation



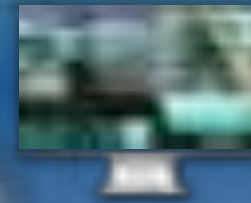
Building Resilience Through Advanced Water Management

SCADA & UOC: Proactive Water Level Monitoring



- **Real-time SCADA & Rainfall Monitoring:** Integrated systems for precise pump control and rainfall data via UOC.
- **Preventative Flood Control:** Proactive management to mitigate flooding in high-risk areas.
- **Enhanced Estate Safety:** Ensuring zero flooding incidents across all industrial estates.

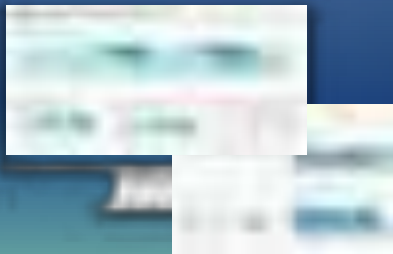
Smart Natural Water Management: Water Resource Monitoring



- **Intelligent Sensors:** Real-time monitoring of reservoir inflow and outflow for dynamic insights.
- **Maximized Water Usage Efficiency:** Managing water resources efficiently to meet current and future needs precisely.
- **Risk Mitigation:** Preventing shortages and flooding to safeguard communities.

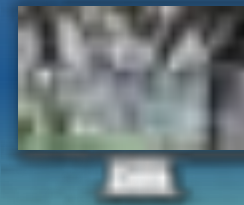
Smart Water Solutions

RO Performance Forecasting: Leaks and Water Loss Detection



- **Predictive RO Maintenance:** AI monitors and predicts membrane fouling, cutting maintenance costs by up to 20%.
- **Advanced Leak Detection:** EPANET software detects leakages and monitors pipelines to minimize water loss.

GIS & Hydraulic Mapping: Water Management Efficiency



- **Accurate Usage Tracking:** Tracks water usage behavior and improves data accuracy.
- **Efficiency & Loss Reduction:** Increases water management efficiency and reduces system losses.
- **Sustainable Planning:** Enables robust long-term water resource planning and management.

Water Conservation : Sustainable Water Ecosystem

Clean Water for Planet Campaign is dedicated to apply our expertise to enhance community's Well-Being by expanding access to clean water and promoting knowledge sharing, creating a sustainable path for the future of our planet



WHA Wetland Water Treatment Facility (WHA ESIE1)



2,555,000 m³ of wastewater treatment capacity per year.

Improve and enhance the quality of local water sources, providing reserve water for communities.

Expanded tree planting initiatives with local communities to increase oxygen levels in the air and reduce CO2 emissions.



WHA Clean Water For Planet For Communities

- WHA constructed Wetland for wastewater treatment, considered a natural technology and easy to maintain that is eco-friendly to various communities to improve the quality of canal water.
- In 2022, wetland projects were delivered to the Pluak Daeng Sub-district Administrative Organization in Rayong Province and Wang Tanot, Nong Khla Subdistrict in Chantaburi Province and WHA provided training on wastewater management and treatment. After the training period, the staff will be able to effectively manage wastewater systems in a sustainable way.

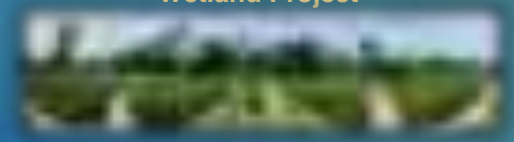
Pluak Daeng Constructed Wetland Project



146,000 m³ of wastewater treatment capacity per year.

480 households

Wang Tanod, Nong Khla Constructed Wetland Project



292,000 m³ of wastewater treatment capacity per year

2,000 households

WHA Clean Water for Planet Knowledge Sharing



Site visit and observed WHA Group's expertise in wastewater treatment at the constructed wetland project.

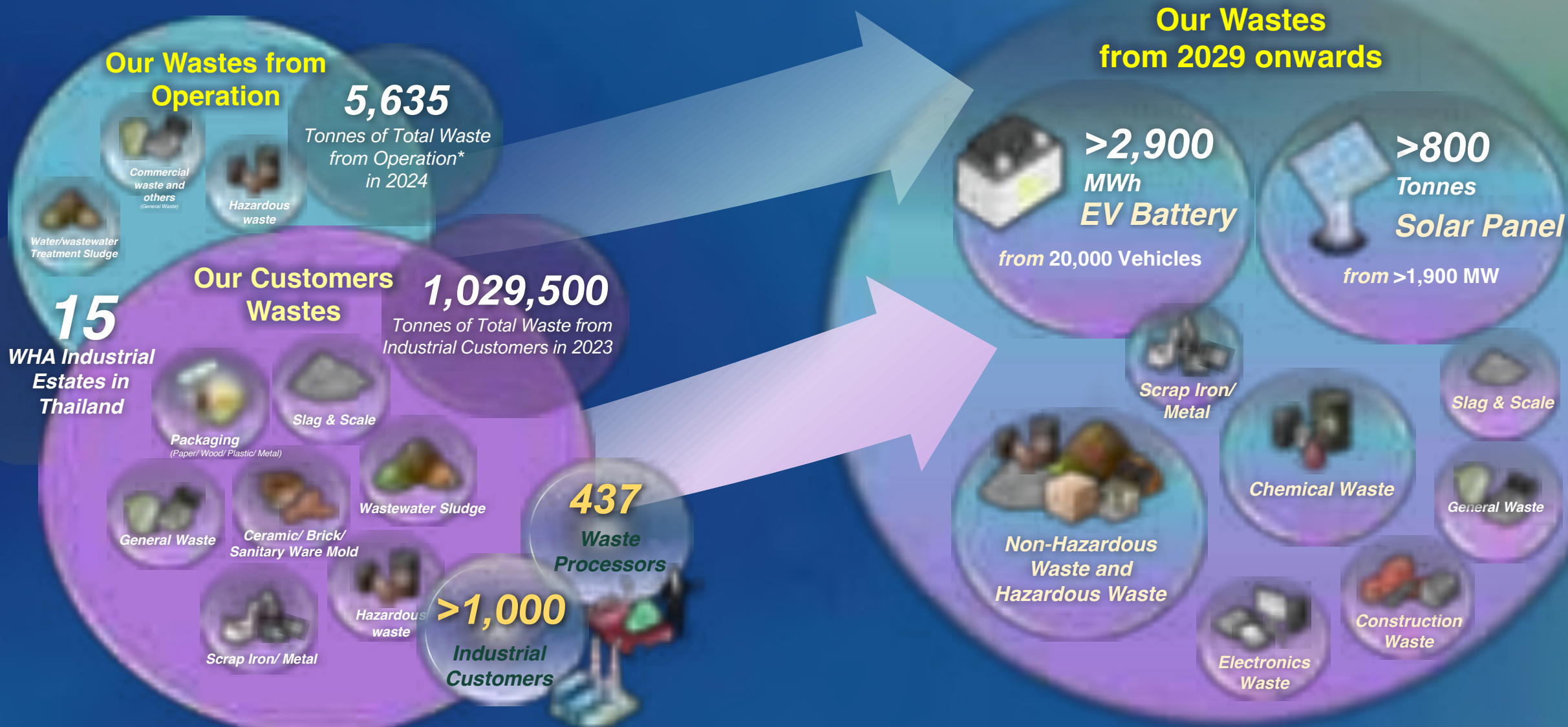
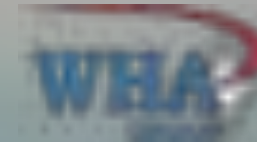


Environmental Detectives Project

882 Students across 8 schools in 2024 around the industrial estate were trained about the importance of water and water resource conservation.

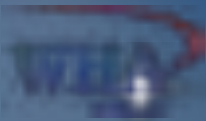
Waste Management : Waste Market Opportunities

Turning Future Waste Challenges into Growth Opportunities



Remark: * This figure is excluded construction waste

Waste Management : Strategy and Target



Our Waste Universe



Strategy

BEGIN WITH THE END IN MIND

Embed circular economy from design, raw material sourcing to end-of-life management process to minimize waste, reduce unnecessary process and resource utilization

HIERARCHIZE WASTE TREATMENT

Prioritize waste treatment options from Reduce, Reuse/Repair, Remanufacture/Upcycling, Material Recovery (Recycle), to limit landfilling and incineration (including with energy recovery).

SCALE UP AND FOSTER CONNECTIVITY

Positioning ourself as Circularity Enabler, driving comprehensive stakeholders (e.g. customers, suppliers, community) involvement to foster a circular economy throughout the value chain.

LEAD TO CREATE THE SUSTAINABLE ECOSYSTEM

Study and develop waste-related new business models with strategic partners to solve ourself and customers' challenging waste management situation and promote circular economy practice to customers and stakeholders in our ecosystem

- ❖ Waste Complexes (100% Circular Industrial Estates)
- ❖ Recycled EV Batteries
- ❖ Second Life Battery (Repropose)
- ❖ Recycled Solvents

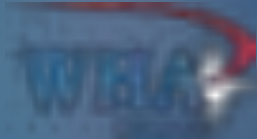
Target

Zero Waste to Landfill

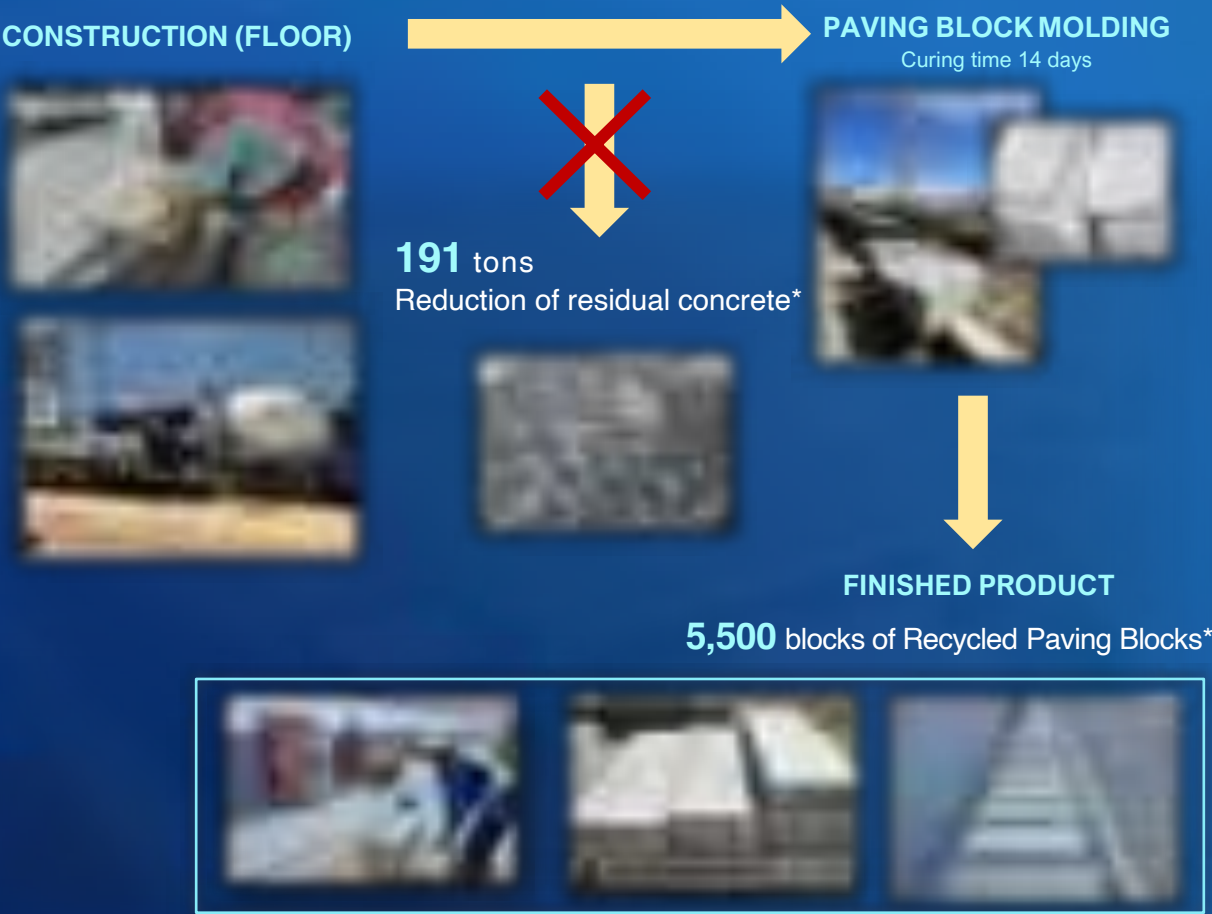
100% Circularity (By 2050)

Launch New Business Model (in 2026)

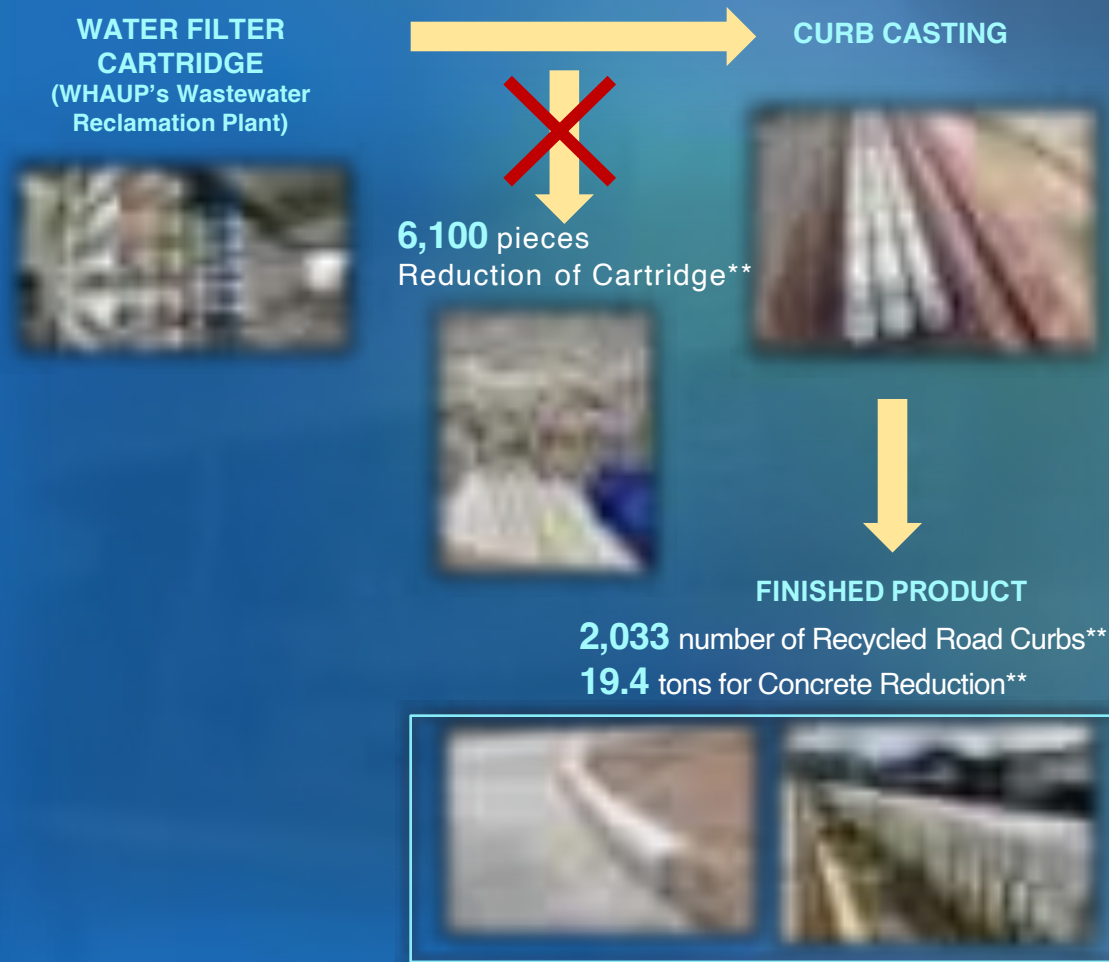
Waste Reduction by 3R : Construction Waste



RECYCLE CONSTRUCTION CONCRETE to PAVING BLOCKS

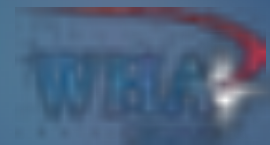


RECYCLE CARTRIDGE FILTER to ROAD CURBS

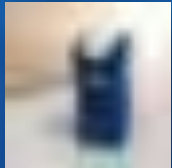


Note *Performance in 2024
**Performance in 2Q2025

Waste Reduction by 3R – Operation Waste



REDUCE PLASTIC WASTE



68,940 bottles*
Reduction of accumulated plastic bottled drinking water

REDUCE PAPER



Path to Paperless

- 1) AP Process Transformation leveraging digital workflow to reduce paper consumption
- 2) ISO digitization transforming to paperless operational process

Target in 2026 **20%** Reduction in paper consumption

REDUCE E-WASTE

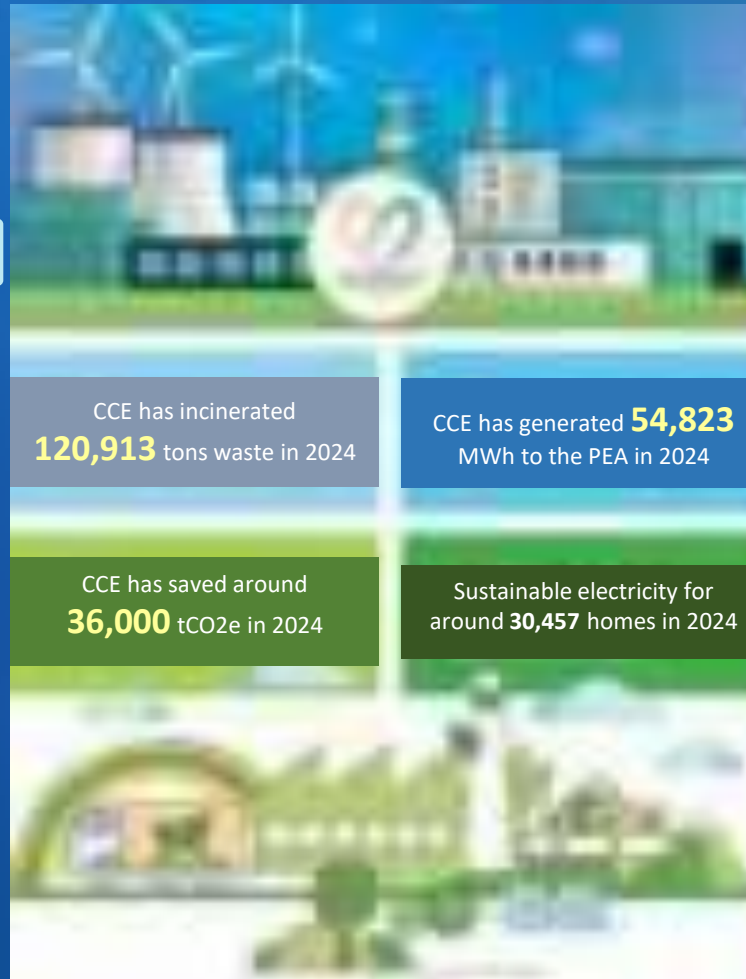


IT Asset Lifespan Extension

- 1) Maximize Computer/Notebook/ Workstation lifespan to reduce e-Waste and embrace sustainability leadership

Target in 2026 **10%** Reduction in E-Waste

REDUCE WASTE TO LANDFILL



REDUCE CHEMICAL & MEMBRANE USAGE

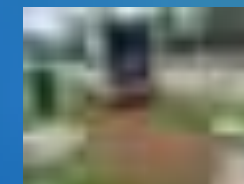


Initiatives

- 1) Use monitoring dashboard and AI to optimize energy and chemical usage
- 2) Prolong RO membranes by prevent over dosage of FRC

Target in 2025 **10%** Reduction in Chemical Consumption

REUSE SAND FILTER to CONSTRUCTION MATERIAL



0.7 tons
Reuse sand media from water treatment plants during 2024 - May 2025

RECYCLE SLUDGE to SOIL NUTRIENT



4,645 tons*
Reduction of sludge waste from water treatment operation

Waste Reduction by 3R : Our Customers' Waste

WeCYCLE is an upcycling and recycling project aimed at effectively utilizing resources such as used plastic bottles, used paper, and used cooking oil. This initiative is part of the WHA Circular Economy concept and strives to achieve Net Zero Emissions by 2050

ขวด ของเหลอ

68 Tons

Used Plastic Bottles
(600 ml.)

Timeline: During 2022 – June 2025

กระดาษเก่าเราขอ

105 Tons

Used Paper

Timeline: During 2023 - June 2025

เรอทอด เราเทิร์น

2.12 Tons

Used Cooking Oil

Timeline: During 2024 - June 2025

Upcycling Products

70 tCO2e

Recycling Products

307 tCO2e

Sustainable Aviation Fuel: SAF

1 tCO2e

Our Success (since 2022)

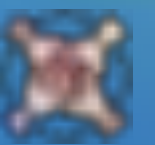
Accumulated since 2022 - June 2025



378 tonCO2e
Total CO2 Reduction



174 tons
Total Waste Reduction



126 Participating
companies



Our AI Transformation



Why AI, Why Now?



AI is no longer a choice – it's a competitive **necessity**



The business world is shifting from being **data-driven** to being **AI-driven**



AI is **not just about technology** — it's about building **new capabilities** for the organization



If you don't start today, you **risk being left behind**

“You won't be replaced by AI, but by someone using AI.”

22-Year Achievements



Embrace Innovation and Technology



2021-2024 Digital Transformation Projects



>40

Projects

Total Investment

274

THB Million
(2021-2024)

> 50

Applications

Total R&D Expenses
and Investment
(2021-2024)

4%

of Normalized
Net Profit

Real-time &
Centralized
Monitoring

Cyber Security

Realtime CCTV on Map

Smart Traffic Management

Contract Management

Corporate Project Management

Enterprise Data Warehouse

Corporate Procurement Management

Cost
Reduction

Enhance
Productivity
& Improve
Efficiency

UOC "Unified Operation Center"

Solar Monitoring and Predictive O&M

Enterprise Asset Management (EAM)

Data Management Platform

Smart Water Solution

Logistics and Building Management

WHA's Strategic Shift to a Tech-Driven Organization



12 AI TRANSFORMATION PROJECTS

Computer Vision

Generative AI

AI/ML Data Insights

AI Cybersecurity

TECH-DRIVEN ORGANIZATION



Data Driven Organization

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

- Manage digital assets
- Innovate with data
- Data monetization

TURNED TO TECH COMPANY

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.

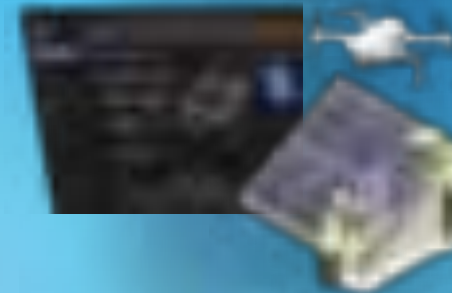
SMART SERVICES



SMART MOBILITY



SMART ENERGY MONITORING



DIGITAL TWINS



UNIFIED OPERATION CENTER (UOC)



2021

2022

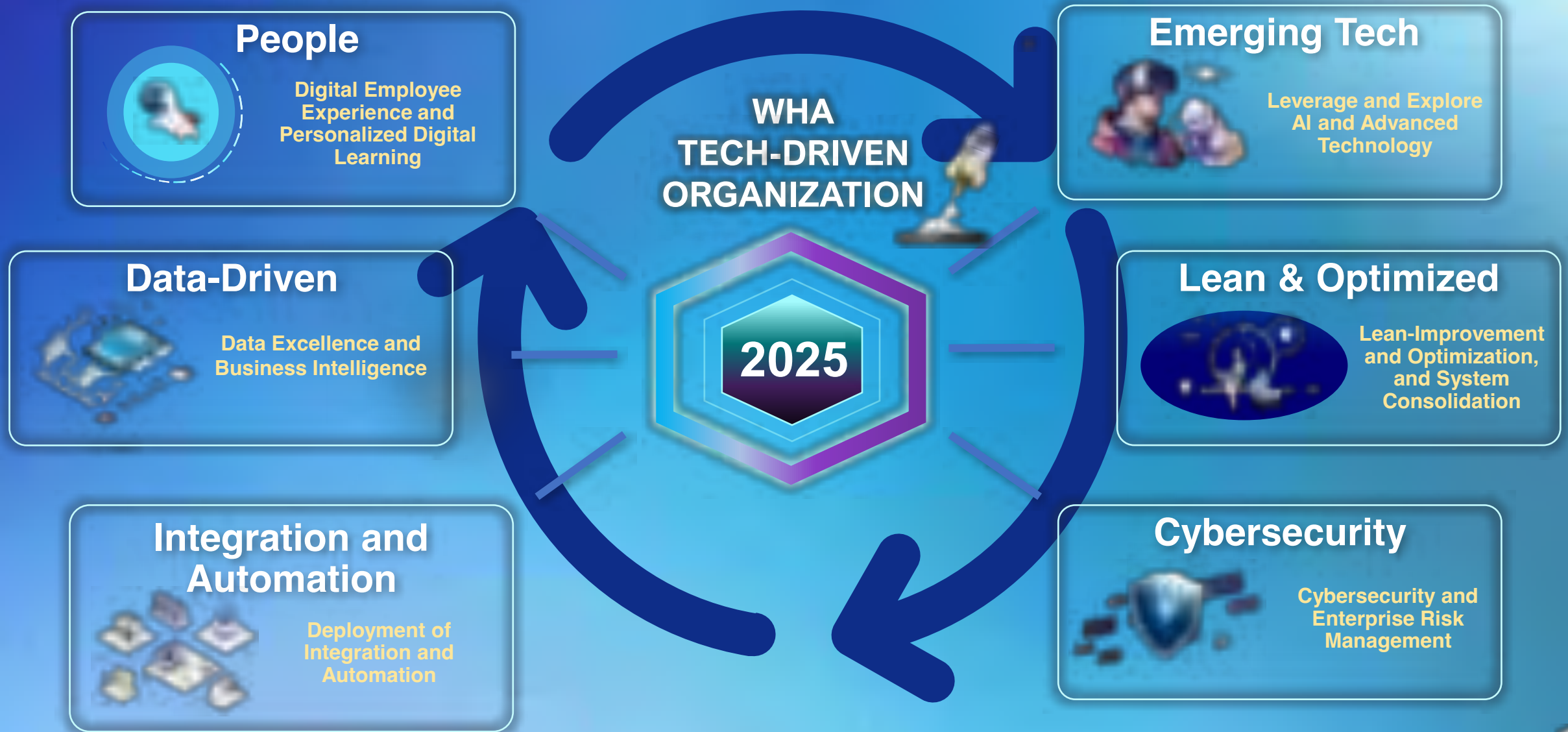
2023

2024

2025

KEY MILESTONES

WHA Digital Transformation 2025 x AI Vision



AI Transformation Projects

Execute a Holistic AI Strategy by Leveraging Technologies to Drive Operational Excellence while Embedding AI Literacy and Governance across the Organization within a Budget of 10 million Baht



AI & ML

Drone Inspection



Automate roof inspections using drone and damage detection

Solar Anomaly & Forecasting



Optimize solar performance through anomaly detection and smarter maintenance

RO Performance Forecasting



Predict membrane lifespan to enhance maintenance and for sustainable operations

Cost Estimation



Generate BOQs, estimate costs and compare product prices

Yoda (AI Assistant)



Provide internal info, streamlines docs, and promotes AI adoption across WHA Group

Knowledge Management



Optimize knowledge flow by streamlining expert knowledge sharing and info access

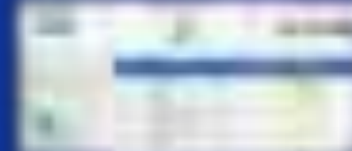
Data Analytics & Business Support

Revenue & Debt Management



Boost debt collection by forecasting default risk

Solar Gap Analysis



Prioritize projects for solar additions for data-driven investment

Robotic Process Automation

Bank Reconciliation



Automate bank statement reconciliation for amount confirmation

Carbon Footprint



Extract electricity bills usage data for carbon tracking

Culture & Literacy

WHA Hackathon



Rise of AI Heroes - WHA's 2nd hackathon

Internal Training



Improve employees' AI literacy with knowledge sharing sessions

AI for Governance



Ensure projects adhere to ethical and compliance standards with training

Revolutionizing Roof Inspections with **AI x Drones**



Leverage on drone technology to inspect roofs for defects, while AI and machine learning analyze the imagery to classify defect type and level of damage

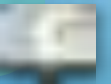
Smart Operation & Maintenance

- Solving the **inefficiencies** in the current manual roof inspection process of warehouse
- Aiming to deliver a **superior drone inspection** service at **lower costs**
- Improving overall **operational efficiency** and customer satisfaction



AI - Roof Inspection

- **AI-Powered Image Processing** – Turning Drone Data into Actionable Insights
- **Automated Defect Detection & Classification** – Spot Issues Before They Escalate
- **Prescriptive Analytics** – AI Recommends the Best Repair Strategies



Expected Benefits

Reduce inspection and reporting time
by up to **90%**

Enhance Roof Inspection Capacity

150,000 sqm/year
Current



600,000 sqm/year
2027 Target

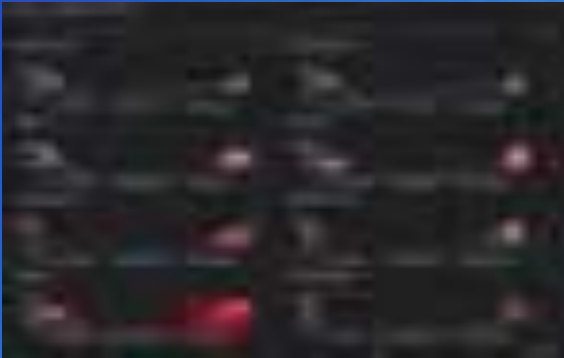


AI for Sustainability



Solar Anomaly Detection

AI solutions are transforming solar energy generation and management



- ✓ Early Anomaly Detection
- ✓ Optimized Energy Output
- ✓ Proactive Maintenance
- ✓ Data-Driven Decisions

Realized Benefits

99%

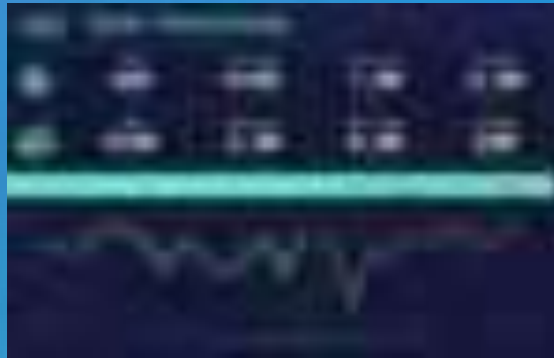
Plant Availability
Improvement

5%

Maintenance
Cost Reduction

Solar Forecasting

AI analyzes solar data to enhance energy output and cut costs



- ✓ Provides Energy Forecast
- ✓ Enhance Site Management
- ✓ Reduces Operation Costs
- ✓ Data-Driven Decisions

Realized Benefits

<48

hours/year Downtime
(from 72 - 96 hrs/years)

>3-5%

Revenue Increase
(by scheduling panel cleaning
on low-generation days)

RO Performance Forecasting

Using Analytics for Water Quality Monitoring and Surveillance



- ✓ Maintenance Cost Saving
- ✓ Improve Water Quality Control
- ✓ Operational Risk Mitigation

Expected Benefits

26%

Reduction in
Chemical Costs
per year

17%

Extension of
Membrane
Lifespan per year

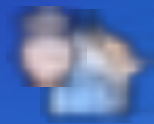
50%

Savings on RO Membrane
Replacement Costs per
year

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



> 210,000 People's annual water usage has been offset through our water reclamation initiative, significantly reducing reliance on natural water sources



>350,000 Students have benefited from education campaigns over the past 27 years



WHA Scholarship Program



WHA Full Board Scholarship



128 Companies in industrial estates are participating in program



> 200,000 Employments
Generated from our industrial development, driving sustainable growth for Thailand

> 10,500 people in local communities have received influenza vaccines from WHA over the past 10 years.



>500 Suppliers participated WHA Supplier Day

- Communication of strategic directions and business guidelines
- Align suppliers' sustainability practices focusing on responsibility in environmental, social, and governance aspects



>50,000 Shareholders are benefiting from our efforts to foster sustainable value

>850 Personnels or 100% of our employees have received training on sustainability



WE SHAPE THE FUTURE

Appendix

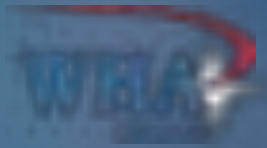


WHA Group :
Empowering Growth,
Embracing Challenges

Responding to Climate
Change

Our AI Transformation

WHA Sustainability Mapped with 17 Sustainability Development Goals (SDGs)



#16 PEACE & JUSTICE STRONG INSTITUTIONS

- Code of Conducts
- 5-star CGR Rating
- Outstanding AGM Scoring
- Supply Chain Management
- Risk and Crisis Management
- Data Security Management

#17 PARTNERSHIPS TO ACHIEVE THE GOAL

- Clean Water for Planet
- Clean Water for Planet Learning Center
- Water Hyacinth Project

#1 NO POVERTY

- WHA E-job Market
- Pan Gan Project
- Water Hyacinth Project

#15 LIFE ON LAND

- Biodiversity Policy And Commitment
- Tree Planting Project

#13 CLIMATE ACTION

- P2P Energy Trading
- Solar power projects
- Battery Energy Storage System
- Green Logistics
- Turquoise Project
- Energy Reduction Program
- Net Zero
- WHA Circular

#12 RESPONSIBLE CONSUMPTION & PRODUCTION

- WHA Circular
- Waste to energy
- Plastic reduction
- Sludge to Soil Nutrient
- WeCycle
- Water Hyacinth Project

#9 INDUSTRY, INNOVATION AND INFRASTRUCTURE

- Demineralized Reclaimed Water
- SCADA
- Smart Metering
- Turquoise Project
- P2P Energy Trading
- WHA Circular
- Unified Operations Center (UOC)
- Vehicle Management System (VMS)
- Green Logistics
- WHAbit
- TusPark WHA
- Digital Transformation Program
- Corporate Document Management System (CDMS)
- WHA Innovation Bootcamp
- Meta W
- E-logistics Startup
- Enterprise ESG Platform
- Customer Journey-Value-Experience
- Customer Insight with AI and Data Analytics

#8 DECENT WORK & ECONOMIC GROWTH

- Enhance Employees Engagement and Satisfaction
- WHA Happy Program
- Low Rental Fee For Community
- Water Hyacinth Project
- Enterprise ESG Platform
- Innovative Workplace
- People Development
- Organization & Culture Development

#7 AFFORDABLE & CLEAN ENERGY

- P2P Energy Trading
- Solar Power Projects
- Battery Energy Storage System
- Green Logistics
- Turquoise Project

#2 ZERO HUNGER

- WHA E-job Market
- Pan Gan Project
- Water Hyacinth Project

#3 GOOD HEALTH & WELL-BEING

- Digital Health Tech
- WHAbit
- Smart Traffic
- Mobile Medical
- Zero Incident Goal

#4 QUALITY EDUCATION

- Art Camp for Students
- Scholarships
- Teacher Fellowship Program
- University Contribution Program

#5 GENDER EQUALITY

- Human Rights Awareness
- Code of Conducts
- Gender Diversity
- Woman Empowerment

#6 CLEAN WATER & SANITATION

- Water Reclamation
- Demineralized Reclaimed Water
- Wastewater Treatment
- Clean Water for Planet
- Water Hyacinth Project
- Wet Land & Learning Center
- Turquoise Project

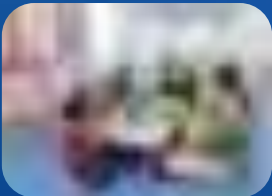
Social : Building Community Growth and Well-Being

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

Education



Baan Dek Foundation



School Bags Contribution



WHA Fellowship Program



2024 Outcome

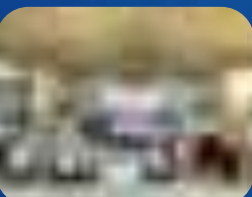
28,203 Peoples Opportunities / Year across 82 schools

1,953,000 Baht support scholarships and teachers

WHA Full Board Scholarship



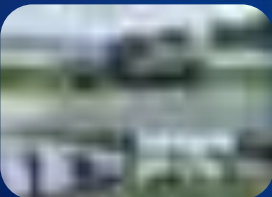
WHA Scholarship Program



Chinese-Thai Language Skills Development Training Project



WHA School Improvement Program



WHA Annual School Contribution



Knowledge Sharing with Chonburi Technical College



HUIBO Delivering Robotics to The Eastern Institute of Vocational Technology



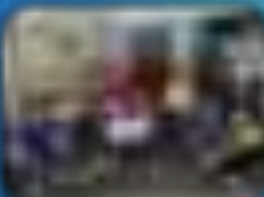
Health and Safety



Support Medical Equipment and Blood Donation



Survival Bags to the Elderly and bedridden patients



Influenza vaccination



2024 Outcome

Health

2,647 peoples received healthcare services.

WHA Punsuk (บ้านสุข) Survival bag Contribution



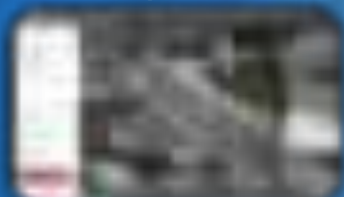
WHA Group Supports SPORTS



WHA Football Camp x Rayong FC



Smart Traffic & Visual Inspection



Safety

0 Fatality case from accident.

Social : Building Community Growth and Well-Being

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

Environment

Solar Rooftop
For the School



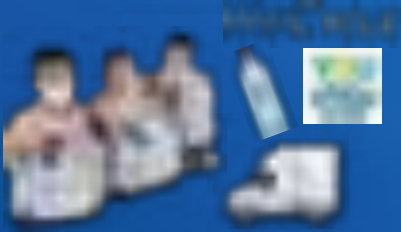
“กระดาดเก่าเราขอ”
WHA x SCGP



Constructed Wetland Water Treatment Facility Pluak
Daeng Project and
Nong Kla (Wang Ta Note Project)



“ขอขวด ของเธอ”
WHA x PTTGC



“เธอทอด เราเทิร์น”
WHA x BSGF



Tree Planting Activities



WeCYCLE Learn &
Share Project



Environment Detective



Outcome

Accumulated GHG Emission
Offset from Social Activities

691 tCO2e



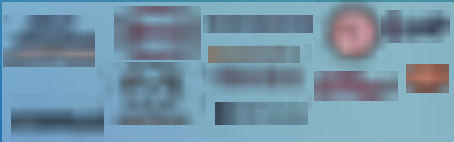
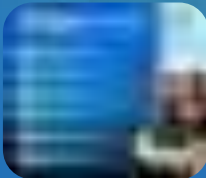
Remark: GHG reduction from Solar Roof,
“ขอขวด ของเธอ”, Tree Planting, “กระดาดเก่า
เราขอ” and “เธอทอด เราเทิร์น”

Occupational Development and Community Economy

WHA Pan Gan Sanjorn (สัญญาจร)



WHA E-Job Pool



2024 Outcome

Generating income
to communities
over **2** Million
Baht / Year

Generating over
650 Jobs
Opportunities /
Year

Contributing to
Employment
Valued at Over
117 Million
Baht / Year

Governance Dimension

Ensuring that Business Operations are Pursued in Accordance With the Principles of Integrity

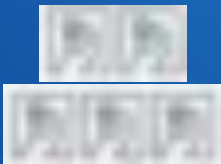
5-Star CGR Rating

Corporate Governance Report of Thai Listed Companies in **5-Stars** “Excellent” criteria from Thai Institute of Directors Association (IOD) over seven consecutive years (since 2018-2024)



Assessment Score of AGM Checklist 2025

Level **“5-Rating”**, obtaining a full score of 100% from the Thai Investors Association (TIA) in over five consecutive years (since 2021-2025)



Business Transparency

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



Business Code of Conduct

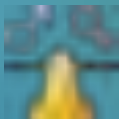
Good corporate governance management approach in accordance with the national guidelines developed by SET and UNGC



100% of Director, Executive and Employee have been communicated and training about CG policy, the Code of Conduct and Anti-Corruption Policy.

Gender Diversity & Woman Empowerment

33.33% of total directors are women – exceeding statutory requirements of the CGR by Thai IOD, ASEAN CGS, ESG Ratings, FTSE Russell and S&P Global.



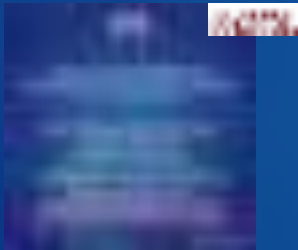
Board Effectiveness

98% BOD attendance in 2024
83.33% of all board members are Independent Directors as of April 2025
98% “Excellent” Self Assessment for the board of directors as a whole



ASEAN CG Scorecard 2024

Top 50 ASEAN Public Listed Companies
1 of 16 Thai Listed Companies



Supply Chain Management

100% of suppliers have signed acknowledgement to the **Supplier Code of Conduct** in 2024



Customer Relationship Management

Customer satisfaction which covered topics including:

- Quality of services provided.
- Tidiness of the industrial estates common areas.
- Quality of communicated news and quality of the trainings provided.



Customer Satisfaction Score

2020	2021	2022	2023	2024
89%	90%	86%	88%	86%

Target 2025
≥89%

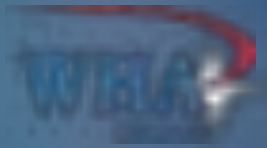


Data Security



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

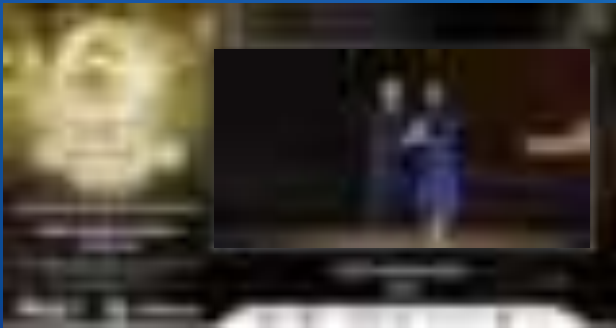
Sustainability Awards & Recognitions



2024 SET Awards

“Sustainability Excellence Category”

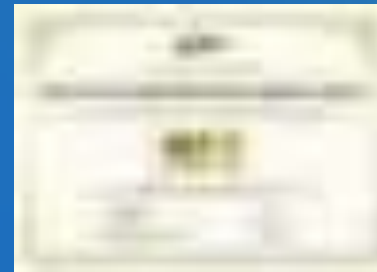
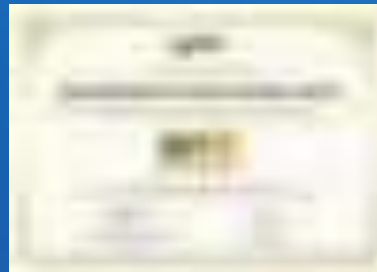
WHA Group
“Best Sustainability Awards”



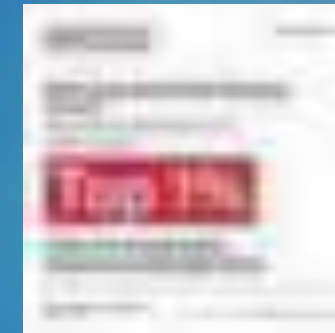
For market capitalization of >30,000-100,000 million baht

SET ESG Ratings 2024

WHA Group & WHAUP Attained the Highest Rating of
“AAA” in SET ESG Ratings 2024, Listed as a Sustainable
Stock for the 5th Consecutive Year



S&P Global CSA Sustainability Yearbook 2025



WHA Group has been honored as a Sustainability Yearbook Member for the 3rd consecutive year, achieving a Top 1% ranking and securing the No. 1 position with an outstanding score of 85/100 in the S&P Global Corporate Sustainability Assessment for the Real Estate Management & Development industry

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Thaipat ESG Rating 2025

WHA Group, WHAUP, WHAIR & WHART^{/2} are listed in the “2025 ESG100” Securities



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 seventh consecutive year